CHARACTERISTICS OF PUPILS ENTERING LEARNING DISABILITIES SELF-CONTAINED CLASSES

1981-1982

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Ester Cole
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TABLE OF CONTENTS

INTRODUCTION 1

PROCEDURES 4
Identification of Variables and 4
Development of Recording Procedures 4
Organization of Form 5
Sections I to IV 6
Section V 6
Section VI 7
Data Collection 8
Identification of Pupils 10
Letters of Consent 10
Data Analysis 11

FINDINGS 13
Rate of Consent 13
Sex 13
Age and Grade 14
Demographic and Family Data 14
Country of Birth 14
Language 18
Socioeconomic Status 18
Family Situation 23
Siblings 25
History of Special Education and Learning Problems in the Family 25
Medical History 28
Birth History 28
Difficulties Experienced by Pupils 30
Developmental Milestones 32
Educational History 34
Special Education Background 38
Academic Achievement as Reported by Teachers . . . 40
Learning Styles 43
Teacher's Modification of the Pupil's Regular Classroom Program 43
Psychological Assessment Procedures 45
Cognitive Correlates of Learning Disability . . . 49
Emotional and Social Correlates 55
SES and Other Variables 62

SUMMARY AND DISCUSSION 64

REFERENCES 72

APPENDIX A 77

APPENDIX B 79

APPENDIX C 93

APPENDIX D 95

APPENDIX E 98

INTRODUCTION

On July 30, 1981, a proposal by the Learning Disabilities Work Group for a study by the Research Department was approved. The purpose of this study, as outlined in the Minutes of the Board (1981, p.677, see Appendix A), was to examine the characteristics of pupils who entered the Learning Disabilities Self-Contained programs in the Toronto system. Special emphasis was to be placed on examining the socioeconomic status, linguistic background, educational history and assessment process by which these pupils were identified. The population considered was those pupils who had been referred to, and accepted for Learning Disabilities Self-Contained classes in the Toronto elementary system and who had been placed in these classes during the 1981-82 school year.

Various issues raised in the Work Group's discussions stimulated the request for this study. The socioeconomic status of learning disabled pupils was a continuing concern of some of the Work Group members. When the Work Group examined the statistics on the enrolment of pupils in Learning Disabilities Self-Contained classes, they found that the number of pupils in these classes had increased rapidly in the last few years. Previous to this, in 1975, it had been found (Gershman, 1976) that children from low socioeconomic status families were significantly under-represented in the Special Program Perceptual classes (the predecessor of the Learning Disabilities Self-Contained classes.) The Work Group was concerned that perhaps the increase of pupils in these classes reflected the use of Learning Disabilities Self-Contained classes to replace Special Programs Self-Contained Primary and Junior for slower pupils, and that the Learning

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Disabilities classes were being used "to stream inner-city children out of regular classroom instruction when they encountered difficulties in meeting school expectations" (The Report of the Work Group on Learning Disabilities, Board, 1982). Initially, there was also a concern that the Board might be in breach of the Ministry of Education's definition of learning disabilities, which excluded pupils whose academic difficulties could be attributed to environmental, cultural or social disadvantage. However, at present, this is not of concern as the definition has since been revised, eliminating the clause related to economic and environmental disadvantage.

Another issue raised by the Work Group was the concern that the Learning Disabilities classes not become a "catch-all program" and "dumping ground" (The Report of the Work Group on Learning Disbilities, Board, 1982) for pupils with problems other than severe learning disabilities. The Work Group wanted to be sure that prior to entering self-contained classes, pupils had received sufficient Special Education support and program modification in regular classrooms.

As a result of these concerns, it was determined that the data used as a basis for a Learning Disabilities class placement should be examined.

At the time that the proposal was approved, the Work Group also recommended that a school psychologist should be involved in the study in order to assist "in interpreting and categorizing the information from the psychological assessments" (Board Minutes, 1982, p.677). As a result of this recommendation, a school psychologist, an employee of Psychological Services (one of the authors), participated in the study on a 25% basis over the

1981-82 school year. After the study had commenced in October, 1981, it was suggested by the Department of Social Work Services that since a substantial amount of data was being obtained from medical and social histories, usually collected by social workers, a social worker should join the project. In January 1982, a social worker joined the study on a part-time basis to help compile the data relating to the pupils' medical and social histories.

A form was designed to collect information reflecting various concerns and interests of the Work Group. The results describe the pupils presently involved in the program. They cannot be generalized beyond that population.

PROCEDURES

The study required that every pupil who entered a Learning Disabilities Self-Contained class in the school year 1981-1982 be identified and located. A permission form was then sent to his/her parents or guardians requesting access to the confidential records of the Psychological and Social Work Services. Following that step, the appropriate files and records were consulted and the data were recorded on a form that had been developed for this project. Following the data collection, the data were coded, keypunched and analyzed.

Identification of Variables and Development of Recording Procedures

Before any of the pupils were identified and located, work began on identifying the variables that would be recorded. Using some typical records, the school psychologist established what data were usually available for these pupils and developed the recording form. The original request for the study was also examined to ensure that data related to all of the Board's concerns were recorded. In addition, a series of categories were developed in the last section of the form to summarize social, emotional and psychological information about the pupil. The final form that was used is reproduced in Appendix B.

In the design of the form, considerable thought was devoted to the continuing controversy as to the definition, etiology and prevalence of the concept 'learning disability'. As discussed in the Work Group Draft Report (Board, 1982), there is little

agreement as to whether learning disabilities stem from neurological, developmental, social or cognitive causes.

A review of literature discloses that writers are attempting to develop new ways of studying the phenomenon of 'learning disability' "which correspond more closely to the heterogeneity of the disorder" (Applebee, 1971). Since the term 'learning disability' is generally assumed to be comprised of a cluster of problems and complaints, it does not imply a single etiology (Friedman, 1973; Taylor et al., 1979; Applebee, 1971; Grover, 1981; Satz and Morris, 1981; McIntyre et al., 1980; Silverman and O'Bryan, 1973). Such a multifaceted view is reflected in the most recent Ministry of Education definition of learning disabilities (1981).

In light of the difficulties in defining 'learning disability', the summarizing categories focus on the possible correlates of learning disabilities rather than their causes. Information included for the review of a pupil's placement deals with many aspects of the social, developmental and medical histories, as well as the pupil's current cognitive and academic functioning. This broad focus was retained in the data collecting instrument.

Organization of Form

The form was divided into six sections, as follows:

I Pupil Information

a) Biographical Data

b) Developmental Milestones and Medical History

II Parental Information

a) Information about Father

b) Information about Mother

III Educational and Social History

IV Psychological Data Obtained About the Pupil

V Cognitive Correlates - Information Processing Skills

VI Emotional and Social Correlates

Sections I to IV

Sections I to IV of the form were designed primarily to record factual information on the pupils. In most cases, the information was available from the school records supplemented by the psychological and social work files (the latter two were available only when signed consent forms had been received.)

In contrast, Sections V and VI attempted to integrate, analyze and interpret the primarily factual data obtained from Sections I through IV.

Section V

The purpose of Section V, "Cognitive Correlates", was to synthesize information from a number of sources including test data and teacher observations in order to obtain an understanding of each child's strengths and weaknesses. An information processing approach was used. This approach to psychology stresses the study of mental processes: input processes, such as attending and perceiving; central processes, such as comparing, transferring and retrieving information; and output processes, involving the communication or recording of a response. It also assumes that a number of such processes are involved in any

cognitive task, and that performance on any task is influenced by a variety of factors, and no one task should be viewed as reflecting just one process (Hresko and Reid, 1981; Board Psychological Services, 1981). The particular processes selected for analysis in Section V were based on a review of recent psychological literature - with a special focus on the work of Kaufman (1975, 1979) and Bannatyne (1971, 1974). The psychological tests that were viewed as having relevance to a given process are listed on the form. It should be stressed, however, that the teacher's anecdotal reports also contributed to the decision of whether a particular process was a strength or weakness for a given pupil. In the case of the teacher's anecdotal data, a judgment was made based on the written reports. In the case of test data, the scores were analyzed to determine if there was a significant discrepancy from the child's average of functioning (Appendix C).

In many cases, the various sources of data were consistent with one another and conclusions about whether a process represented a strength or weakness in functioning were reached with little difficulty. In cases where inconsistencies arose, greater weight was given to data having known psychometric properties with good reliability and validity. In a small number of cases, if the relevant data were not available or were so inconsistent as to make such a judgment inappropriate, no judgment was made about a particular process.

Section VI

Section VI of the form is entitled "Emotional and Social Correlates". Although definitions of learning disability

typically exclude primary emotional disturbances, it was felt that data about social and emotional variables would provide a fuller description of these pupils (Weininger, 1982; Chapman and Boersma, 1979).

Though dealing with a different psychological domain, the procedures involved in Section VI were similar to those of Section V. For each category, information from a variety of sources was integrated; however, because the type of information available varied greatly from child to child, and was mainly of an anecdotal nature, these sources are not made explicit in the form itself.

Data Collection

In this retrospective study, a variety of sources were tapped to collate and consolidate information on the characteristics of candidates for Learning Disabilities Self-Contained classes throughout the Toronto Board of Education. It should be noted that most of these were the data available to the Identification, Placement and Review Committee which made the placement decisions. Sources for data obtained were as follows:

1. Psychological Files - In addition to the formal psychological report, these files provided raw psychometric data, interview notes, and information obtained from community support services. These files were accessed only if parental consent had been obtained.
2. Social Work Files - In addition to the Social Medical History, these files contained notes and data based on interviews and information received

from other agencies. These files were accessed only if parental consent had been obtained.

3. School Report for the Identification, Placement and Review Committee - This report is prepared by teachers for the Identification, Placement and Review Committee (I.P.R.C.) It contains information on the pupils' current academic functioning, information on curriculum modifications for the pupils, information on any withdrawal programs they had attended, their school attendance patterns and contacts the homeroom teacher had with the pupils' parents. This report also describes the pupils' work habits and peer and teacher relationships within the classroom.

4. The Ontario Student Record - The material in these folders provided information on the pupils' educational history, school functioning and attendance patterns. Psychological reports, the School Report for the Identification, Placement and Review Committee, and occasionally Social Medical Histories were also found in these files.

5. Office Record Cards - These provided information about parents' places of birth and occupations as well as the pupils' places of birth.

Initially, previous teachers of these pupils for the school year 1980 - 1981 were interviewed for information about the curriculum modifications they had made. Many of the teachers, however, felt reluctant to discuss programming that they had done

over half a year ago. They felt their memories might not be accurate; from the study's perspective, these recollections tended to be too general. As a result, it was decided to use the School Report for the Identification, Placement and Review Committee as a source for this information.

Identification of Pupils

The sample in the study consisted of those pupils who, for the first time in their educational careers, entered a Learning Disabilities Self-Contained class in the 1981 - 1982 school year. The Special Education Department provided the investigators with a list of these pupils. As additional pupils may be placed in these classes throughout the year, the investigators periodically consulted these lists for new arrivals to these classes. In the 72 Learning Disabilities Self-Contained classes that existed that school year in the system, 255 pupils were identified for this project.

Letters of Consent

After pupils were identified for the study, letters of consent (Appendix D) were sent to the parents requesting their permission to use information from confidential sources, i.e. the psychologists' and social workers' files. The letters were sent out in English, Italian, Greek, Chinese, Portuguese, or Spanish, according to the language used in the home. A follow-up telephone call was made to the parents who did not mail back the consent forms within two weeks. By January approximately half the parents

consented. In an attempt to increase the number of consents a second letter (Appendix D) was sent to those parents who had not responded. By the end of the school year, 64% of the parents had consented. For those pupils whose parents did not consent, information was limited to what could be obtained from the school records.

Data Analysis

Before entering the data into the computer, all the responses to open-ended questions were categorized. For some variables extensive categories were developed in order to reflect properly the pupils' records. Examples of these variables include reasons for latest referral for assessment and modifications made to a pupil's regular classroom program. In some cases, categories were condensed when it became apparent that elaborations were inappropriate or unnecessary, and more appropriate and simplified codes were developed. Examples of these variables include major operations, accidents or illnesses, where various kinds of incidents were not coded separately, but the incidents were collapsed into "yes/no (present/absent)" categories; criteria were established to determine which cases were major.

When examining the various files available for a particular pupil, it was occasionally difficult to ascertain if particular items of information were not mentioned because that information was not collected or was unavailable or unrecorded. This is particularly true in the Social Medical History, where medical details are not always noted. In those cases, the relevant items were coded as "No Information", as it could not always be assumed

that missing information meant no history of the particular incident.

As the objective of the study was to describe the pupils, it seemed that frequency counts of the data would be an appropriate way of analyzing the information at this stage. Following the coding of the data collection forms, the data were keypunched. Frequency counts were run on each variable and converted to percentages. In the first draft of this report, all the variables were reported in text, which made the report seem cumbersome, so in rewriting, some of the tables were moved to the Appendix and are only briefly noted in text.

In several instances, two variables were tested to determine whether they were associated with each other. For these purposes, chi-square significance tests were used with the significance criterion being a chance probability less than or equal to .05.

FINDINGS

The results discussed in the report offer a description of the pupils who entered Learning Disabilities Self-Contained classes in 1981 - 1982.

The results are presented primarily in tabular form; however, some of the simple data are reported only in text.

Rate of Consent

Of the 255 pupils in the study, 63.9% of the parents gave permission to access information from the confidential files of Psychological and Social Work Services. Analyses were done to determine whether there were factors that may have affected the parents' decision to consent to access these files. It was found that there was no relationship between mother's education, parents' place of birth or occupation and the decision to consent. However, the results do indicate that the children of those parents who did consent were slightly more likely not to have had any kind of support services prior to their placement in a Learning Disabilities classroom.

Sex

Studies have shown that boys are more frequently referred than girls for learning problems. Gregory (1977) found that teachers were more likely to refer boys than girls with identical problems and suggested that this reflected a sex bias. This high proportion of males to females is demonstrated in this study. Most of the pupils (76.9%) were male. An earlier study of the Research Department (Gershman, 1976) also found that males tended

to be over-represented in Special Education classes; at least two-thirds were male in many of the programs, including the Perceptual programs.

Age and Grade

The distribution of ages in this study is summarized in Table 1. As indicated in the table, the eight and nine-year-old age group represented 36.9% of the pupils and the ten and eleven-year-old group represented 31.4% of the population. It was also found that the pupils mainly came from grades 1 - 3, with fewer from grade 4 and even fewer from grade 5 (Table 2). Therefore, the findings to be discussed pertain to a predominantly male population that generally falls within the eight to eleven-year-old age group.

Demographic and Family Data

Country of Birth

As indicated in Table 3, 76.6% of the pupils were born in Canada, and 19.1% were reported as not having been born in Canada, with 7.9% born in Europe, 2.8% born in the Caribbean and 3.4% born in South America. In 1975, 88% of the pupils in Perceptual classes were born in Canada (Gershman, 1976.) (Perceptual classes were the predecessors of Learning Disabilities classes.)

Over one-third of the parents of the pupils in this study were born in Canada (i.e. 35.0% of the fathers and 44.1% of the mothers.) The countries of birth reported most frequently for parents born outside of Canada were, in order of frequency, Portugal, Greece, Jamaica, Italy and the United Kingdom.

TABLE 1

DISTRIBUTION OF L.D. PUPILS BY AGE IN 1980 - 1981

Age	Number	Percent
7 years old or less	13	5.1
8 years old	54	21.2
9 years old	40	15.7
10 years old	44	17.3
11 years old	36	14.1
12 years old	33	12.9
13 years old	27	10.6
14 years old	6	2.4
not recorded	2	0.8
Total	255	100.1%*

* Does not equal 100.0% due to rounding of fractions.

NOTE: Age was recorded as reported when the referral form for the I.P.R.C. was prepared.

TABLE 2

DISTRIBUTION OF L.D. PUPILS BY PREVIOUS GRADE LEVEL (1980 - 1981)

Grade Level	Number	Percent
Grade 1	44	17.3
Grade 2	52	20.2
Grade 3	49	19.2
Grade 4	32	12.5
Grade 5	28	11.0
Grade 6	25	9.8
Grade 7	5	2.0
Special Program (Withdrawal) - Primary Half Day	2	0.8
Special Program (Behavioural) - Junior	1	0.4
Special Program (Behavioural) - Senior	1	0.4
Special Program (Hospital and Institutional) - Junior	1	0.4
Special Program (Reading)	4	1.6
Special Program (Primary)	3	1.2
Special Program (Junior)	4	1.6
Special Program (Senior)	1	0.4
No information	3	1.2
Total	255	100.2%*

* Does not equal 100.0% due to rounding of fractions.

TABLE 3

COUNTRY OF BIRTH FOR L.D. PUPILS

Place of Birth	Number	Percent
Ontario	96	37.6
Quebec	1	0.4
New Brunswick	1	0.4
Newfoundland	1	0.4
Manitoba	1	0.4
British Columbia	1	0.4
Northwest Territories	1	0.4
Canada (province not specified)	93	36.5
United States	2	0.8
Chile	1	0.4
Ecuador	3	1.2
Guyana	4	1.6
Guatamala	1	0.4
Caribbean	1	0.4
Jamaica	6	2.4
Greece	1	0.4
Hungary	1	0.4
Netherlands	1	0.4
Poland	1	0.4
Portugal	14	5.5
United Kingdom	3	1.2
Kuwait	1	0.4
Philippines	1	0.4
Hong Kong	3	1.2
Australia	1	0.4
Pakistan	1	0.4
Mozambique	1	0.4
Nigeria	1	0.4
No information	12	4.7
Total	255	100.3%*

* Does not equal 100.0% due to rounding of fractions.

Language

Table 4 provides a breakdown of languages spoken in the homes of these pupils. The majority of the pupils spoke only English while 17.3% spoke English and another language (other than French). The most frequently spoken languages other than English were Portuguese, Greek, and Italian. Compared to the general population (Wright and Dhanota, 1981), there were more pupils speaking English as a first or only language in these classes than in regular classes. These findings are also similar to those in the 1975 Every Student Survey (Gershman, 1976). The percentages may reflect the educational criteria used for admitting pupils to this Special Education program. An immigrant pupil is not usually considered until he/she has been in Canada long enough to determine whether there is a learning problem or whether the difficulties are related to learning English.

Socioeconomic Status

The Blishen occupational scales for males and females (Blishen and Carroll, 1978 and Blishen and McRoberts, 1976) were used in this study to code the job descriptions of the pupils' parents. The scales rank the various occupations for males and females according to a combination of income and education to reflect the occupations.

After the parents' job descriptions were coded, they were classified into six categories according to the method used by Wright and Dhanota (1981). Table 5 indicates the distribution of the 201 pupils for whom information was available about father's occupation; Category 1 included those who are unemployed, on a pension or retired (5.1%). Category 2, the lowest category in

TABLE 4

LANGUAGES SPOKEN AT HOME

Language	Number	Percent
English only	174	68.2
English and French	1	0.4
English and another language	44	17.3
Cantonese	1	0.4
Greek	5	2.0
Italian	5	2.0
Portuguese	11	4.3
Spanish	1	0.4
No information	13	5.1
Total	255	100.1%*

* Does not equal 100.0% due to rounding of fractions.

TABLE 5

SOCIOECONOMIC STATUS OF L.D. PUPILS
BASED ON FATHER'S OCCUPATION

SES Category	Blishen's Index Values*	Illustrative Occupations	Number	Percent
1		pensioner, student, retired, unemployed	13	5.1
2	18-32	newsboy, labourer, truck driver, waiter, carpenter, orderly, door-to-door salesman	72	28.2
3	33-40	shipping clerk, welder, referee, dancer, engraver, hotel manager, teller, cashier	31	12.2
4	41-54	mail carrier, musician, typist, athlete, most foremen, many supervisors, real estate sales, minister, tool & die occupations, physiotherapist	29	11.4
5	55-65	social worker, writer, editor, draftsman, psychologist, many managers, elementary school teacher	13	5.1
6	66-75	chemist, pilot, accountant, secondary school teacher, lawyer, physician	21	8.2
		self-employed	12	4.7
		employed but not codable	10	3.9
		no information	54	21.2
Total			255	100.0

* Only first two digits of Blishen's values were used for coding.

terms of average income and education had 28.2%, and the highest category, Category 6, had 8.2%. However, there were 21.2% for whom there is no information.

Table 6 presents the results for mothers; information is missing for 12.5% of them. In the 1975 Every Student Survey (Gershman, 1976) it was found that Perceptual classes (the precursors of Learning Disabilities Self-Contained classes) had larger proportions in the higher categories and smaller proportions in the lower categories (taking missing information into account). However, the categories used in the two studies are not directly comparable.

Data collected on socioeconomic status (SES) background from the Grade 9 Student Survey (Wright and Dhanota, 1981) were used for a chi-square comparison with the data from this study. (All missing information was excluded, and data from two-parent and one-parent families were combined.) The results indicate that data for fathers in both studies were similar. However,there was a difference in the data for mothers (chi-square = 29.31 with 5 degrees of freedom). In this study it was found that 50.8% of the mothers were not working outside the home and 21.3% of the mothers fell into Category 2. By comparison, in the grade 9 population, only 34.2% of the mothers were not employed and 36.0% of the mothers were represented in Category 2. (Again, these percentages were calculated excluding the cases where there was "No Information".) It may be that mothers of younger children are less likely to be employed and that these mothers who have stayed at home are unlikely to get high status jobs if they re-enter the labor force.

Data for mother's education was examined, but it was not

TABLE 6

SOCIOECONOMIC STATUS OF L.D. PUPILS
BASED ON MOTHER'S OCCUPATION

SES Category	Blishen's Index Values*	Illustrative Occupations	Number	Percent
1		homemaker, unemployed, student, pensioner, retired	100	39.2
2	20-33	charwoman, chambermaid, babysitter, hairdresser, sewing machine operator	42	16.5
3	34-45	cashier, typist, bookkeeper, nursing assistant, bank clerk	30	11.8
4	46-57	secretary, actress, statistical clerk	15	5.9
5	58-66	physiotherapist, community college teacher, personnel officer, policewoman, nurse	7	2.7
6	67-87	university professor, elementary school teacher, secondary school teacher, social worker, psychologist, physician, lawyer	3	1.2
		self-employed	5	2.0
		employed but not codable	21	8.2
		no information	32	12.5
Total			255	100.0

* Only the first two digits of Blishen's values were used for coding.

reported in over half the cases (58.4%) and father's education was so infrequently present that it was not collected.

Family Situation

Table 7 gives a detailed breakdown of the family situation of the pupils. When the categories of two-parent families were collapsed (2 natural parents, natural father, natural mother, child adopted) it was found that 67.9% of the pupils fall into these categories, and 24.0% were living in a single parent home. These findings are somewhat similar to the findings of the pupils' family situation in the Grade Nine Student Survey 1980, where 73.2% were living with both parents and 20.5% were living with either mother only or father only. (The pupils in this study were of course younger.) In 1975 (Gershman, 1976) more of the pupils in Perceptual classes were living with both parents (79.3%) while 19.8% were living with only one parent. (In Appendix E, Table 38, the incidence of separation, divorce and death for this study is reported.)

Relatively few of the parents had experienced serious illnesses or accidents (less than 10%), and even fewer had experienced mental illnes, but nearly a third of the mothers and over a fifth of the fathers had experienced family problems. (See Appendix E, Tables 39 and 40 for the incidence of illnesses, accidents and family problems and Table 41 for a list of the categories for these incidents.)

Very few of the pupils had experienced complete separation from their mothers or from both parents due to factors such as immigration or divorce. (Appendix E, Table 42 and Table 43 give the incidence of separation from mother and from both parents.)

TABLE 7

FAMILY SITUATION OF L.D. PUPILS

Student lives with:	Number	Percent
2 natural parents	151	59.2
Natural father	1	0.4
Natural mother	18	7.1
Child adopted	3	1.2
Father only	4	1.6
Mother only	57	22.4
Relatives	3	1.2
Foster care	3	1.2
No information	15	5.9
Total	255	100.2 *

* Does not equal 100.0% due to rounding of fractions.

NOTE: Of the pupils who do not live with both natural parents, 27 are visited frequently, 11 are visited rarely, 27 are never visited, and information was not reported for the others.

Siblings

Almost a third (32.2%) of the pupils had only one sibling, 19.2% had two siblings, and 16.5% had three. There were only 5.1% with no siblings (Table 8).

As Table 9 indicates, many of the pupils were either last (36.5%) or first (22.0%) in the birth order. This is partly an artifact because of the small families. (Household size is reported in Appendix E, Table 44.) Coding procedures for birth order are noted in Table 9.

Greer and Whitley (1971) reported a significant relationship between birth order and incidence of learning disabilities. Vockell and Bennett (1972) found no support for these findings. Idol-Maestas (1981), however, indicates that later birth order may be a predictor for children with central language problems. To date no consistent findings have been reported on birth order and learning disabilities.

Of the pupils, 33.7% had both male and female siblings; 15.5% had siblings who were of the opposite sex, and 21.2% had siblings of the same sex. Information was not available for 11.0% of the pupils, and 5.1% were only children.

Also the results show that in 22.7% of the cases there was a large age difference (5 years or more) between the pupil and his/her siblings. In 54.9% of the cases there was no large age difference. In 18.8% of the cases information was not available.

History of Special Education and Learning Problems in the Family

Results of a study done by Matheny, Dolan and Wilson (1976) on identical twins suggest that there may be genetic influences on the incidence of academic difficulties. Other studies support the

TABLE 8

NUMBER OF SIBLINGS LIVING IN HOUSEHOLD

Number of Siblings	Number	Percent
0	13	5.1
1	82	32.2
2	49	19.2
3	42	16.5
4	22	8.6
5	12	4.7
6	4	1.6
7	3	0.4
8	1	0.4
12	1	0.4
15	1	0.4
No Information	25	9.8
Total	255	99.3 *

* Does not equal 100.0% due to rounding of fractions.

NOTE: Two percent of the pupils were adopted.

TABLE 9

PUPIL'S BIRTH ORDER IN FAMILY

Birth Order **	Number	Percent
No Siblings	13	5.1
First	56	22.0
Second	14	5.5
Middle	39	15.3
Last	93	36.5
No Information	40	15.7
Total	255	100.1 *

* Does not equal 100.0% due to rounding of fractions.

** When coding pupil's birth order, four categories were used:

"First" refers to those pupils who were born first, but it does not include pupils with no siblings.

"Second" includes those pupils born second in a family that consists of more than three children.

"Middle" includes those pupils who were second of three children or were born after the second sibling and before the last in a family of four or more children.

Coding for the few twins that appeared in this study was a problem. It was arbitrarily decided to code twins without siblings (or firstborn) as "second". Twins were coded as "middle" if they were born second, third, fourth, etc.

idea that having relatives who have had learning problems can be a predictor for children with central language problems (Idol-Maestas, 1981). In this study, 33.7% of the pupils had family members reported as having had school-related problems; of those, siblings were most commonly reported as having academic problems. For 53.3% of the cases (Table 10), school-related problems were not reported for the family.

Table 11 shows that 20.0% of the pupils had siblings who were reported to have been in Special Education classes.

Medical History

Much of the information collected on the items related to the pupils' developmental and medical histories reflects no unusual patterns of prenatal development or birth for these pupils.

Birth History

In other research studies, learning disabled children have been found not to differ from their controls in mean gestational age (Matheny, Dolan and Wilson, 1976). In this study the majority of pupils (81.2%) were full-term babies with only 5.1% being short-term. (Information was lacking for 13.7% of the pupils.) Complications experienced by mothers during their pregnancies and at or after birth are noted in Appendix E, Tables 45 and 46.

Of the deliveries themselves, 69.8% were reported as having been normal, with 17.3% reported as being difficult. No information was available for this variable for 12.9% of the cases. Matheny et al. (1976), however, found that there was a greater incidence of breech births among learning disabled

TABLE 10

NUMBER OF PUPILS WHOSE FAMILY HAD SCHOOL RELATED PROBLEMS

Family Member	Number	Percent
None	136	53.3
Siblings	36	14.1
Mother	5	2.0
Father	15	5.9
Other (i.e. blood relative)	7	2.7
Any combination of siblings, mother, father	20	7.8
Either siblings, mother or father, and other	3	1.2
Not Applicable	4	1.6
No Information	29	11.4
Total	255	100.0

TABLE 11

NUMBER OF PUPILS WITH SIBLINGS IN SPECIAL EDUCATION CLASSES

Category	Number	Percent
Yes	51	20.0
No	163	63.9
Not Applicable	9	3.5
No Information	32	12.6
Total	255	100.0

children than among normal children.

They also noted that there was no significant difference in birth weight between learning disabled and normal children. Similarly, in this study, a very small percentage of the subjects (1.6%) had low birth weights (i.e. 2250 grams and under), 63.9% had average or above average birth weights, and in 34.5% of the cases this information was not recorded.

Many of the pupils (72.5%) did not experience any complications at or after birth, (Appendix E, Table 47) but 14.1% of the pupils were reported to have experienced complications.

Difficulties Experienced by Pupils

A study by Matheny et al. (1976) found that a greater percentage of learning disabled children had experienced speech problems than their control peers. The results in this study indicate that 11.4% had experienced speech problems in the past or continued to do so (Table 12). Pihl (1979) found that there is growing evidence that learning disabled children have a disproportionately high number of specific allergies. It has been suggested that a major allergic disease may significantly affect a child's ability to learn (Rapaport and Flint, 1976). In this study 14.1% of the pupils were reported as having had an allergy or as still having one.

The majority of the pupils, as reported by their parents, had not experienced most of the other difficulties listed in Table 12. Of the 19 pupils reported as having experienced hyperactivity, 14 pupils were reported as having been treated by drugs for hyperactivity.

Other data on childhood illnesses, accidents and operations

TABLE 12

DIFFICULTIES EXPERIENCED BY PUPILS
AS REPORTED BY PARENTS
(in Percent: N = 255)

Categories	Not Present	Present But Corrected	Present, Still a Problem, or Correction Not Indicated	No Information *
Visual Difficulties	78.4%	7.5%	4.7%	9.4%
Hearing Difficulties	80.8%	4.7%	5.5%	9.0%
Mixed Laterality	84.8%	0.4%	5.6%	9.8%
Allergies	76.1%	1.6%	12.5%	9.8%
Seizures	87.8%	1.2%	1.2%	9.8%
Encopresis	87.5%	1.6%	1.2%	9.8%
Enuresis	81.6%	3.9%	4.7%	9.8%
Hyperactivity	82.7%	3.9%	3.5%	9.8%
Speech	79.2%	1.2%	10.2%	9.4%
Other (e.g. migraines, eczema, obesity, overweight, nasal congestion)	82.4%	4.3%	3.5%	9.8%

* The ambiguity of some of the reports and the absence of files resulted in the "No Information" category.

appear in Appendix E, Tables 48 and 49. Also, contacts made by the pupil's family with support services for these and other problems are detailed in Appendix E, Tables 50 to 53.

Due to illnesses or operations, 2.0% of the pupils were confined at home for two weeks or more; 13.7% were in the hospital for at least one week and 2.0% spent time both at home and in the hospital. Most pupils, 68.6%, had not been confined to either home or the hospital. There was no information for 13.7% of the pupils.

Developmental Milestones

Parents of children with learning problems tend to perceive their children as exhibiting behaviors such as overactivity, sleeping and feeding problems and temper tantrums more often than do others (Matheny et al., 1976). In this study, very few mothers reported their children as exhibiting these behaviors, as indicated in Table 13.

The developmental milestones of the pupils noted in this study were language and motor development: 67.5% developed language at the appropriate stages, while 75.3% developed motor skills at the appropriate stages. More pupils (15.3%) exhibited delayed language, as compared to delayed motor skills (8.6%). Only 5.9% developed language and 3.1% developed motor skills earlier than expected. In 11.4% of the cases, there was no information available for language development, and 12.9% had no information for motor development.

TABLE 13

SYMPTOMS OF BEHAVIOURAL PROBLEMS DISPLAYED
BY PUPILS FROM BIRTH TO FIVE YEARS OF AGE
(in Percent)
(N = 255)

Category	Yes	No	No Information
Temper Tantrums	4.7%	84.3%	11.0%
Overactivity	9.0%	80.0%	11.0%
Excessive Crying	7.5%	82.0%	11.0%

Educational History

Due to the assessment procedures being used at the Board, it would be expected that school-related problems could be detected in early years. This is confirmed in Table 14, which is based on information derived from the pupils' Ontario Student Records (O.S.R.'s). Over five-sixths of the pupils had problems noted by the end of Grade 1: 9.0% in Junior Kindergarten, 24.7% in Senior Kindergarten, and 52.2% in Grade 1. The problems recorded in the O.S.R. documents were classified as primary or secondary learning difficulties depending on whether it seemed that the teacher stressed the problem as major or not. Tables 15 and 16 indicate that underachievement in general and/or specific academic areas was the primary and secondary learning problem most mentioned (64.7% and 24.7%). In Appendix E, Tables 54 and 55, which provide a more detailed breakdown of learning difficulties, the results indicate that of the academic areas mentioned, reading was the primary learning problem most frequently reported (37.6%) and mathematics was the most common secondary problem reported (14.5%).

When information for primary and secondary learning difficulties was collected, the difficulties were noted in the order in which they appeared in the files. For example, if a difficulty was mentioned third, this should not be interpreted as meaning that this was the third most important difficulty for a particular pupil. Thus, the total of mentions in the first, second and third categories in Tables 15 and 16 indicates the frequency (not severity) of a difficulty.

The pupil achievement forms of Senior Kindergarten were

TABLE 14

GRADE AT WHICH LEARNING PROBLEM FIRST NOTED
(N = 255)

Grade Level	Number	Percentage
Junior Kindergarten	23	9.0%
Senior Kindergarten	63	24.7%
Grade 1	133	52.2%
Grade 2	18	7.1%
Grade 3	2	0.8%
Grade 4	2	0.8%
Grade 5	1	0.4%
No Information	13	5.1%
Total	255	100.1% *

* Does not equal 100.0% due to rounding of fractions.

TABLE 15

PRIMARY LEARNING DIFFICULTIES REPORTED BY TEACHER

Learning Difficulties **	First Difficulty	Second Difficulty	Third Difficulty	Total N (%) *
Underachievement in general and/or specific academic areas	98	53	14	165 (64.7)
Difficulty with specific learning processes	43	46	13	102 (40.0)
Difficulty coping with classroom demands	76	43	16	135 (52.9)
Behavioural, social and emotional problems	29	29	12	70 (27.5)
No information	9			9
Total	255	171	55	481

* The percentages were calculated based on N = 255.

** A more detailed breakdown of learning difficulties appears in Appendix E, Table 54.

TABLE 16

SECONDARY LEARNING DIFFICULTIES REPORTED BY TEACHER

Learning Difficulties **	First Difficulty	Second Difficulty	Third Difficulty	Total N (%) *
Underachievement in general and/or specific academic areas	49	11	3	63 (24.7)
Difficulty with specific learning processes	19	8	2	29 (11.4)
Difficulty coping with classroom demands	8	3	1	12 (4.7)
Behavioural, social and emotional problems	11	7	1	19 (7.5)
No information	168			168
Total	255	29	7	291

* The percentages were calculated based on N = 255.

** A more detailed breakdown of learning difficulties appears in Appendix E, Table 55.

examined for teachers' ratings of the pupils' gross and fine motor skills, language, social and emotional development. Table 17 indicates that difficulties in fine motor and language development were more frequently mentioned than the other categories.

Special Education Background

The Final Report of the Learning Disabilities Work Group (1982) refers to a survey conducted by the Co-ordinator of the Learning Disabilities Programs. The results of the survey indicated that as many as 37.0% of the pupils in Learning Disabilities Self-Contained classes, in 1981-1982, had not received previous program support either through partial withdrawal in a Learning Centre or Reading Clinic or in classes with an itinerant teacher. The results of this report are similar to the above findirgs; 34.5% had not received any previous Special Education help prior to the placement in a Learning Disabilities Self-Contained class; 62.4% had received some form of Special Education support, and information was unavailable for 2.2% of the pupils.

Of the 50 pupils who had no prior Special Education help, 56.0% of them had never repeated a grade, 42.0% had repeated one grade, and 2.0% had repeated two grades.

For the entire sample (255 pupils), repetition of grades was common, with 65.5% having repeated one grade (Table 18). The Appendix contains a table reporting the number of schools attended by these pupils (Appendix E, Table 56). The incidence of absenteeism from school is also outlined in Appendix E, Table 57.

As Table 19 indicates, many of the pupils who did not receive prior help were quite young; 38% were eight years old. Therefore,

TABLE 17

TEACHER'S OBSERVATIONS RE DEVELOPMENT IN SENIOR KINDERGARTEN
(in Percent: N = 255)

Category	Satisfactory	Unsatisfactory	No Information *
gross-motor	51.8	4.3	43.9
fine motor	48.2	23.1	28.6
language	55.7	20.8	23.5
social	67.5	5.9	26.7
emotional	57.3	9.8	32.9

* This data was often not reported, particularly for the older pupils.

TABLE 18

NUMBER OF GRADES REPEATED

Number of Grades	Number	Percent
0	74	29.0
1	167	65.5
2	8	3.1
No Information	6	2.4
Total	255	100.0

NOTE: Of the above pupils, there were 15.9% who had been transferred (moved ahead a grade without promotion) one or more times.

TABLE 19

AGE OF PUPILS WITH NO PRIOR SPECIAL EDUCATION BACKGROUND (1981)

Age	Number	Percent
12	4	8.0
11	4	8.0
10	3	6.0
9	12	24.0
8	19	38.0
7	8	16.0
Total	50	100.0

it can be argued that these pupils had not attended school long enough to have developed a history of withdrawal help.

The Special Education help received by the pupils varied. Table 20 outlines the different programs that these pupils attended. As the results indicate, 40% of the pupils had attended a Learning Centre on a withdrawal basis. (The amount of time that had already been spent in Special Education is listed in Appendix E, Table 58.)

The reaction of parents to a Special Education placement was recorded: 36.1% were eager to have help for their children, 7.5% were indifferent to the placement, 6.3% were reluctant to agree to the placement. However, for half the pupils (49.8%), no information on parents' reaction was reported.

The majority of the pupils were reported as being aware of their problem (68.6%), 7.5% were not aware, and in 23.9% of the cases, no information on this matter was reported.

Academic Achievement as Reported by Teachers

Information from the School Report for the Identification, Placement and Review Committee (which is completed by a referring teacher) provided a report on pupils' achievement in reading, mathematics and spelling. The results generally indicate that in the early grades many pupils were below grade level, particularly in reading, while in the higher grades essentially all of the pupils were below grade level. (See Appendix E, Table 59.) Similarly, results of a study done by Dowdy, Crump and Welch (1982) indicated that learning disabled pupils tended to lag in reading with additional years in school.

TABLE 20

SPECIAL EDUCATION PROGRAMS ATTENDED

Program	First Program Mentioned	Second Program Mentioned	Third Program Mentioned	Total N (%) *
Learning Centre	72	27	3	102 (40.0)
Speech (withdrawal)	24	12	7	43 (16.9)
ESL (withdrawal)	31	8	4	43 (16.9)
Reading (half day)	27	13	1	41 (16.1)
Other School Board (withdrawal)	9	4	1	14 (5.5)
Perceptual (half day)	8	4	1	13 (5.1)
Primary (withdrawal)	3	4	1	8 (3.1)
Primary (self-contained)	3	4	1	8 (3.1)
Special Education (withdrawal)	5	3		8 (3.1)
Junior (withdrawal)	4	2	1	7 (2.7)
Reading (self-contained)	3	3	1	7 (2.7)
Other School Board (self-contained)	4	1	1	6 (2.4)
Junior (self-contained)	1	1	3	5 (2.0)
ESL (self-contained)	2	2		4 (1.6)
Behavioural (half day)	1	2		3 (1.2)
Behavioral-Junior (self-contained)	2			2 (0.8)
Hospital & Institutional (Junior)	1			1 (0.4)
Senior (self-contained)	1			1 (0.4)
Language-Junior (self-contained)		1		1 (0.4)

(Continued)

TABLE 20 (Continued)

SPECIAL EDUCATION PROGRAMS ATTENDED

Program	First Program Mentioned	Second Program Mentioned	Third Program Mentioned	Total N (%) *
No program	51			51 (20.0)
No information	3			3 (1.2)
Total	255	91	25	371

* The percentages were calculated based on N = 255.

NOTE: While ESL (English as a Second Language) is not a Special Education program, it seemed worth including in this table.

Learning Styles

Information about pupils' learning styles related to various learning situations and settings was derived from a variety of sources, including appraisals submitted by homeroom teachers, progress reports prepared by withdrawal program teachers, and assessments by Psychological Services. The categories in this section were adapted from the Bristol Social Adjustment Guides - The Child in School, developed by Stott (1971, 1975).

Generally, most of the pupils were reported as appreciating praise (92.8%, excluding "No Information"). Most could only work alone if watched by the teacher or with some kind of supervision (71.0%) or could work in a group only if supervised (72.2%). Many were reported as attending to anything but their work (51.6%, excluding "No Information"). 51.1% (excluding "No Information") had difficulty with seatwork activities and were described in general as being "hard to stimulate" (See Appendix E, Tables 60 to 65.) Additional data on social behaviour out of school, i.e. friends, hobbies and organized activities, is also reported in the Appendix (Appendix E, Tables 66 to 68).

Teacher's Modification of the Pupil's Regular Classroom Program

Recommendation of a pupil to a self-contained class placement should follow previous attempts at helping the pupil in a regular classroom setting by making modifications to that pupil's program; it might also have included some Special Education help on a withdrawal basis. It was, therefore, of interest to collect information on the methods and modifications which the regular classroom teacher reported had been used in an attempt to help the pupil. As Table 21 indicates, most of the pupils had been exposed

TABLE 21

MODIFICATIONS OF REGULAR CLASSROOM PROGRAM

Modification **	First Modification Mentioned	Second Modification Mentioned	Third Modification Mentioned	Total N (%) *
Individualized academic program by homeroom teacher	112	78	50	240 (94.1)
Special Education programs	65	19	4	88 (34.5)
General modification of classroom demands and provision of extra attention and encouragement	31	23	10	64 (25.1)
Out of school support program	3	---	1	4 (1.6)
School operated withdrawal program	9	5	---	14 (5.5)
No information	35			35 (13.7)
Total	255	125	65	445

* The percentages were calculated based on N = 255.

** A more detailed breakdown of classroom modifications appears in Appendix E, Table 69.

to various interventions, the most frequent being individualized help in class for certain subject areas by the homeroom teacher. Other forms of intervention included attendance in Special Education withdrawal programs, general modification of classroom demands and provision of extra attention and encouragement. A detailed list of program modifications, drawn from the teacher's report prepared for the Identification, Placement and Review Committee, is presented in Appendix E (Table 69). Again, first, second and third only reflects the order in which the modifications were listed by the teacher and do not necessarily reflect degree of importance.

Psychological Assessment Procedures

In the Toronto Board of Education, all children referred to an Identification, Placement and Review Committee (I.P.R.C.) to be considered for placement in a self-contained Special Education program have received a recent psychological assessment. The research team had access to the psychological assessment data in those cases where parents gave their signed consent. Reasons for referral as stated on the Psychological Services Referral Forms were recorded. These reasons were categorized in order to gain some idea of the types of school problems the pupils were presenting. In cases where more than one reason was given, first, second and third reasons were listed in the order in which they were stated on the referral form. As in previous tables, these reasons reflect the order in which they were listed by the referring teacher, and not necessarily the order of importance.

Table 22 shows that referrals were most frequently made

TABLE 22

REASON FOR REFERRAL FOR LAST PSYCHOLOGICAL ASSESSMENT

Reason **	First Reason Mentioned	Second Reason Mentioned	Third Reason Mentioned	Total N (%) *
Perceived Student's Problem				
a) General - Poor academic achievement/ progress	58	6	3	67 (26.3)
b) Underachievement in specific academic areas	47	27	4	78 (30.6)
c) Difficulty with a specific learning process	31	18	14	63 (24.7)
d) Difficulty coping with classroom demands	8	16	10	34 (13.3)
e) Behavioural, social and emotional problems	2	15	9	26 (10.2)
f) ESL student - difficulty in language development	3	4	---	7 (2.7)
Current assessment required	91	35	6	132 (51.8)
Determine student's strength and weakness	4	2	---	6 (2.4)
Parental request	5	---	---	5 (2.0)
No information	6			6 (2.4)
Total	255	123	46	424

* The percentages were calculated based on N = 255.

** A more detailed breakdown of reasons for referral appears in Appendix E, Table 70.

because pupils were perceived to be experiencing some problems or difficulties. This was the first reason given in 149 of the 255 cases. It predominated amongst the second and third reasons given as well. (Table 70 in Appendix E provides a more detailed breakdown of the reasons for referral.)

The second most common reason for referral was that a current assessment was required. Statements such as "for I.P.R.C." were included in this category, which would seem to indicate that educational personnel had Special Education placement in mind when initiating referral. Further, support for this interpretation may be derived from the fact that over half of the pupils had received previous psychological assessments (see Table 23).

A third category of referrals was initiated simply to obtain more information about the pupils' academic strengths and weaknesses. A final category (2% of cases) was referral at parental request.

In the majority of cases where pupils were perceived to be experiencing problems or difficulties, the predominant reason for referral related to academic difficulties. Both general and more specific academic problems in areas such as reading, spelling or mathematics were recorded. Of these, reading difficulties were most common (15.3%). A second type of difficulty noted by teachers was related to some specific learning process, such as poor visual memory, impaired communication skills or auditory processing. It is possible that these teachers were aware of the Ministry of Education's focus on specific learning processes in its definition of learning disability, and wished to highlight such areas in referrals for psychological assessment. It should also be noted that areas such as behaviour, social and emotional

TABLE 23

NUMBER OF ASSESSMENTS GIVEN

No. of Assessments	Number	Percent
1	119	46.7
2	100	39.2
3	26	10.2
4	5	2.0
5	1	0.4
9	4	1.6
Total	255	100.1% *

* Does not equal 100.0% due to rounding of fractions.

NOTE: Only 4.3% of the pupils had been given a psychiatric assessment through the Board.

problems or difficulty in coping with classroom demands were relatively infrequent (10.2% and 13.3%) reasons for referral among pupils who were eventually placed in learning disabled programs.

Given that most referrals were made for academic reasons, it is not surprising that the major assessment effort was directed towards evaluation of cognitive and academic skills. These assessments included classroom observations, interviews with pupils, parents and teachers, and several standardized assessment measures. Of measures designed to assess cognitive skills, the WISC-R (Wechsler Intelligence Scale for Children - Revised) was used in over 80% of cases. Other tests such as Raven's Progressive Matrices, Peabody Picture Vocabulary Test, Bender Gestalt Test for Young Children, Slingerland's Screening Test for Identifying Children with Specific Language Disability, and Wepman's Auditory Discrimination Test were commonly used to explore specific cognitive or information processing skill areas. Standardized tests of academic achievement were frequently given, with the Wide Range Achievement Test being used most often (48.2%). Tables 71 to 73 (Appendix E) summarize the frequency with which measures designed to assess cognitive and informational processing skills and academic achievement were used. (Analyses of differences between Performance and Verbal Scores on the WISC-R are also reported in Appendix E, Tables 74 and 75.) Finally, the Goodenough Draw-a-Person Test was administered to 27.8% of the pupils.

Cognitive Correlates of Learning Disability

The data of the present study were analyzed to determine whether pupils placed in Learning Disabilities programs have

specific difficulties in mental processes, what those difficulties are, and whether those pupils are also characterized by a significant discrepancy between achievement and ability. Data from the pupils' psychological files were obviously important in answering these questions. However, an attempt was made to go beyond the psychometric data and incorporate information from a variety of sources, including teacher observation and anecdotal data (see Table 24). Although test scores were certainly a part of the analysis, these scores were not used in isolation. Rather, they were interpreted by members of the research team in view of other information available about the child. This multifaceted approach was derived in part from a variety of literature sources, including: Kaufman, 1979; Feuerstein, 1979; Grover, 1981; Sattler, 1974; Galvin, 1981; Dudley et al., 1981.

Although the Ministry of Education definition of learning disability focuses on mental processing difficulties, it does not specify what these processes might be. For the present study, three major types of cognitive skill areas were identified in the literature as being major sources of individual differences in cognitive skill. These included language (verbal comprehension skills), visual performance (perceptual organization skills) and concentration span (distractibility). In addition, a number of more specific skill areas were examined in order to determine whether deficits in these skill areas were prevalent in the population being studied. These include specific kinds of reasoning and information processing skills in both visual and auditory modes. This analysis was carried out only for the 163 pupils whose parents had given their permission to the research team to examine the psychological files.

TABLE 24

TEACHERS' RATINGS VS. ACHIEVEMENT SCORES
(in Percent: N = 255)

Category	Reading	Spelling	Mathematics
No difference *	25.9	21.2	26.7
Above Achievement Scores	4.3	4.7	6.3
Below Achievement Scores	20.8	15.3	13.7
Comparison not possible	48.6	58.4	52.9
No information	0.4	0.4	0.4

* A difference of less than half a grade level was classified as "no difference".

NOTE: Comparisons are not possible in about half the cases. However, when comparing the two categories "Above Consultants' Ratings" and "Below Consultants' Ratings" there is a higher percentage of the latter. There appears to be a tendency for teachers to rate pupils below the achievement level indicated by norm referenced measures. These findings are consistent with Coleman and Harmer (1982), who found that the grade levels of students on achievement tests were higher than those reported by tutors and teachers. This may be due to the fact that teachers do not base their ratings on achievement tests alone but tend to consider criterion referenced measures.

Table 25 provides information on the percentage of pupils judged to have strengths or weaknesses in one of the three global skill areas of language, visual performance or concentration span. The table also indicates the proportion of pupils for whom no information in a particular skill area was available, or for whom the findings were so inconsistent as to make that identification as an area of strength or weakness impossible.

The table shows that about half the pupils were felt to have weaknesses in the language area (49.1%); nearly as many pupils (42.9%) were felt to have weaknesses in the visual performance area. However, a far higher proportion (71.8%) of the pupils were felt to have poor concentration spans. Poor concentration (distractibility) seems to be the dominant characteristic of pupils placed in Learning Disabilities Self-Contained programs. One could hypothesize that this is one of the major characteristics of the pupils which makes it difficult to program for them within regular classrooms, or to meet their learning needs through resource or withdrawal programs, and which eventually leads to their placement in self-contained programs.

Table 26 lists the specific information processing skills examined and indicates the proportion of pupils felt to have specific strengths and weaknesses in each area. In addition, the proportion of pupils for whom the data were too inconsistent to make a judgment or for whom no information was available are indicated. Referring to the last column, "No Information", it may be seen that there was considerable inconsistency in the availability of adequate information across areas. For example, there was no information regarding auditory discrimination in 46% of the cases, but this was true in only 11% of the cases for

TABLE 25

COGNITIVE CORRELATES
(in Percent: N = 163) *

Category	Strength	Weakness	Average	No Information
Language	20.2	49.1	19.0	11.7
Visual Performance	13.5	42.9	22.1	21.5
Concentration	6.7	71.8	8.6	12.9

* The results are based on those pupils whose parents gave permission to access information from the files of the psychoeducational consultants. Therefore, N=163 and not 255.

TABLE 26

INFORMATION PROCESSING SKILLS
(in Percent)
(N = 163) *

Category	Strength	Weakness	Average	No Information
Abstract Reasoning	18.4	20.2	34.4	27.0
Concrete Reasoning	23.9	7.4	40.5	28.2
Attention and/or Short Term Memory (Auditory)	5.5	57.1	12.9	23.9
Receptive Language	5.5	50.3	9.2	35.0
Oral Expression	30.1	42.3	11.0	16.0
Acquired Language	9.2	33.1	25.8	31.9
Auditory Discrimination	4.9	35.6	13.5	46.0
Sequential Organization (Auditory)	6.1	29.4	19.6	44.2
Attention and/or Short-Term Memory (Visual)	2.5	56.4	3.7	37.4
Sequential Organization (Visual)	5.5	54.0	12.3	28.2
Spatial Organization	4.9	55.2	4.9	33.7
Motor Coordination (Visual)	5.5	65.6	17.2	11.0
Long-Term Memory (Visual)	7.4	34.4	20.9	37.4

* The results are based on those pupils whose parents gave permission to access information from the files of the psychoeducational consultants. Therefore, N=163 and not 255.

visual-motor coordination. That makes the strength and weakness data somewhat difficult to interpret. In particular, it is possible that an area was not specifically investigated unless it was felt on observational grounds to be problematic. This may account for the predominance of identified weaknesses over identified strengths in the table.

In spite of this methodological problem, it is possible to make several generalizations on the basis of these data. First of all, weaknesses in specific input-output processes having to do with the handling of auditory or visual information (attention, memory, recall, expressive skills and so forth) predominate over more general reasoning and problem-solving skills. Secondly, a variety of problems are noted with considerable frequency. Third, attentional deficits with respect to the handling of auditory and visual information occur quite frequently, in 57% of the cases for auditory information and 56% of the cases for visual information. The other predominant area of difficulty is in visual-motor coordination, which was identified as a weakness in 65% of the cases.

The data in Tables 25 and 26 demonstrate that the children placed in Learning Disabilities classes have a wide variety of information processing problems. Problems in the visual-motor and auditory language areas seem to be equally frequent, although quite a large number of the children did experience specific visual-motor problems. Finally, lack of concentration span, distractibility and attentional deficits seem to be frequent problem areas for children in this population.

The final question to be addressed in this section is whether in addition to these processing deficits the children were also

lagging in their achievement relative to their abilities. It was possible to examine this question using the psychological reports which were in the pupils' Ontario Student Records and in teachers' reports prepared for the Identification, Placement and Review Committee. A summary of the data from this examination and analysis is shown in Table 27. It can be seen that in the vast majority of the cases, 85.5%, the pupils' intellectual abilities were judged to be greater than their academic achievements. Thus, most of the pupils placed in Learning Disabilities programs clearly satisfy this requirement of the Ministry definition.

Emotional and Social Correlates

Over the last decade, educators and researchers have emphasized the importance of the interrelationship between pupils' attitudes towards school and themselves as learners and its impact on academic achievement and social adjustment (Kinsbourne and Caplan, 1979; Prillaman, 1981; Cole, 1981; Thomson and Hartley, 1980; Stott, 1976; Samuels and Edwall, 1981; Koppitz, 1971; Kauffman and Hallahan, 1976; Chapman and Boersma, 1979). Chapman and Boersma found significant discrepancies between learning disabled and children in regular classes, in assessing their self-perception as pupils, with learning disabled children reporting considerably lower self-perception of ability than their counterparts. Experimental studies conducted by Seligman and his colleagues (1975, 1978), conclude that emotional factors such as learned helplessness can play a significant role in pupils' academic profiles. Research demonstrates the extensive interrelationships between the pupils' perceptions of themselves, psychological adjustment to school and success in cognitive

TABLE 27

DIFFERENCE BETWEEN ACADEMIC ACHIEVEMENT
AND ASSESSED INTELLECTUAL ABILITY

Category	Number	Percent
No difference	10	3.9
Yes - in favour of Achievement	3	1.2
Yes - in favour of Intellectual	218	85.5
Comparison not possible	13	5.1
No information	11	4.3
Total	255	100.0

learning. Some research studies report positive correlations between self-concept and perception of school, social status at school, emotional adjustment, mental ability and academic achievement.

In the present study, many pupils were found to have difficulties in these emotional and social areas. Information from the various available sources was examined to make some judgments about the characteristics of these pupils. Tables 28 to 37 report the distributions of the data for each of the social and emotional correlates. Over half of the pupils were described as being highly distractable (67.1%) and as having low tolerance for frustration (56.5%). Also of interest was that many of these pupils exhibited low self-esteem (61.6%) and immaturity (41.2%).

As has already been discussed, pupils' intellectual abilities were judged to be significantly greater than their academic achievement profiles. It can be hypothesized that low frustration tolerance, distractability and lowered self-esteem both contribute to and are exacerbated by the pupils' inability to adapt to regular classroom programming. Variables such as aggression, anxiety and depressive symptoms were not very prevalent in this sample.

Generally, it was difficult to conclude whether most pupils were highly or poorly motivated. 48.2% were seen as highly motivated, and 45.1% were seen as poorly motivated, with 6.7% of the cases lacking information for this variable.

TABLE 28

DISTRACTABILITY OF PUPILS

Category	Number	Percent
Highly Distractable	171	67.1
Occasionally Distractable	22	8.6
Not Distractable	25	9.8
No Information	37	14.5
Total	255	100.0

TABLE 29

MATURITY OF PUPILS

Category	Number	Percent
Immature	105	41.2
Mature	37	14.5
No Information	113	44.3
Total	255	100.0

TABLE 30

PUPILS WITH IMPULSIVE LEARNING STYLE

Category	Number	Percent
Yes	80	31.4
No	47	18.4
No Information	128	50.2
Total	255	100.0

TABLE 31

PUPIL'S MOTIVATION

Category	Number	Percent
High Motivation	123	48.2
Poor Motivation	115	45.1
No Information	17	6.7
Total	255	100.0

TABLE 32

PRESENCE OF
DEPRESSIVE SYMPTOMS IN PUPILS

Category	Number	Percent
Present	39	15.3
Absent	124	48.6
No Information	92	36.1
Total	255	100.0

TABLE 33

APPEARANCE OF ANXIETY IN PUPIL

Category	Number	Percent
Present	87	34.1
Absent	81	31.8
No Information	87	34.1
Total	255	100.0

TABLE 34

PUPIL'S LEVEL OF SELF-ESTEEM

Category	Number	Percent
Low	157	61.6
High	55	21.6
No Information	43	16.9
Total	255	100.1 *

* Does not equal 100.0% due to rounding of fractions.

TABLE 35

INCIDENCE OF AGGRESSIVE, ACTING-OUT BEHAVIOR

Category	Number	Percent
Frequently	19	7.5
Occasionally	60	23.5
Never	144	56.5
No Information	32	12.5
Total	255	100.0

TABLE 36

PUPIL'S SOCIAL SKILLS

Category	Number	Percent
Difficulty with Peers	49	19.2
Difficulty with Adults	8	3.1
Difficulty with both	27	10.6
Well-done with both	159	62.4
No Information	12	4.7
Total	255	100.0

TABLE 37

TOLERANCE OF FRUSTRATION

Category	Number	Percent
High Tolerance	28	11.0
Low Tolerance	144	56.5
No Information	83	32.5
Total	255	100.0

SES and Other Variables

As the SES background of these pupils was of concern to several members of the Learning Disabilities Work Group, analyses of this variable were undertaken with regard to several other variables.

To facilitate later analyses, the six categories of SES (Wright and Dhanota, 1981) were reduced to three levels, and the following scheme was used: (N = 255)

Low SES (Level 2)	16.5%
Medium SES (Level 3)	11.8%
High SES (Level 4, 5, 6)	9.8%
Not Employed (Level 1: unemployed, homemaker, student, pensioner or retired)	39.2%
No information	22.7%

When analyzing the data for SES, mother's occupation was considered because there was less information missing for that variable than for father's occupation.

In this study, the results indicate that the Performance and Verbal IQ score discrepancies were significantly related to SES when mother's occupation was considered. (See Appendix E, Tables 74 and 75 for discrepancy scores.) Pupils with higher Verbal than Performance skills were more likely to be high SES, while pupils with higher Performance than Verbal skills were more likely to be low SES. This pattern, however, is not specific for an LD population. Research, according to Kaufman (1979) has shown that generally children who are from professional families tend to score higher on the Verbal Scale than the Performance Scale, with the reverse tending to be true for children of unskilled workers.

Zingale and Smith's study (1978), however, did not find such a relationship.

The relationship between SES and the information processing skills examined was tested to determine whether pupils at certain SES levels exhibited strengths or weaknesses in particular areas. It was found that there was no significant relationship between the pupil's SES background, and strength or weakness in the information processing skills which were considered.

The results also indicate that the SES of these pupils did not significantly affect their referral to Special Education programs prior to their placement in a Learning Disabilities class. That is, other Special Education programs had been tried to the same extent for high SES as for low SES pupils, prior to their present placement. In a study by Low and Clement (1982) it was found that SES was not a significant variable in predicting whether a child was referred for Special Education help.

SUMMARY AND DISCUSSION

At the request of the Learning Disabilities Work Group, the current research study was designed as a retrospective analysis of characteristics of pupils who entered Learning Disabilities Self-Contained classes during the academic year 1981-82. Special emphasis was placed on identifying linguistic background, socioeconomic status, educational history and assessment information by which these pupils were identified prior to placement in Learning Disabilities programs.

As current literature on the subject of learning disabilities stresses that the term comprises a cluster of problems, and must therefore be examined as a heterogeneous disorder, data collection emphasized pupils' current cognitive and academic functioning and aspects of their social and developmental histories. As stressed by such writers as Farnham-Diggory (1978) and Kinsbourne and Caplan (1979), a comprehensive approach to the study of learning disabilities should comprise both "how" and "what" learning disabled pupils are doing within the academic milieu. Weininger (1982) stated:

> "...perhaps it is time to look at the whole child and to try to understand more of the interaction between the motivational state, the emotional characteristics and the intellectual skills of each child, and how these variables interact with teacher characteristics and approach to the learning environment." (p.18)

Of the 255 children entering Learning Disabilities Self-Contained programs, parental consent to examine confidential psychological and social work files was obtained in 163 cases. Biographical characteristics of these pupils may be summarized as follows: Over three-quarters of the pupils were male and 68% were

between the ages of eight and eleven. Most pupils were born in Canada and spoke English only. These findings are consistent with those of many other studies, such as Gershman (1976) and Leinhard et al. (1982).

The socioeconomic status (SES) of the pupils in Learning Disabilities Self-Contained classes was a serious concern to the Learning Disabilities Work Group. Results of past studies have indicated a relationship between SES, diagnosis and placement of learning disabled children. One Canadian study (Kealy and McLeod, 1976) found that even though there was no significant difference in defined learning disability between children of above average and below average socioeconomic status, there was a difference in the rate of diagnosis between the two groups. The children from higher SES backgrounds were more frequently diagnosed as learning disabled. In a 1981 study, (Bernard and Clarizio), no SES bias was indicated in the decision of placing of pupils in Learning Disabilities classes. However, it was found that middle SES children were more likely to be found in classes for the learning disabled and that low SES children are over-represented in classes for the educable mentally impaired. Franks (1971) also found that there were significantly fewer pupils with low SES backgrounds in Learning Disabilities classes. Similar findings were reported in the 1975 Every Student Survey (Gershman, 1976) where high SES pupils were over-represented in Perceptual classes in Toronto at that time. In the present study, using the results based on father's occupation, over-representation of any particular SES category did not seem to be present and the proportions were similar to those of the Grade Nine Student Survey (Wright and Dhanota, 1981). Mothers in this study, however, were less likely

to be employed than in the other two studies (Gershman, 1976; Wright and Dhanota, 1981). The change in the SES background of these pupils since 1975 from an over-representation of high SES to an SES distribution similar to that of the school population may be attributed in part to the increase of these classes throughout different areas of the system. In 1975, most of these classes were concentrated in the north end of the city, which may account for the over-representation of pupils with a high SES background. As these classes spread to other areas of the city, the SES backgrounds of the pupils in these classes have become similar to the SES backgrounds of the total population.

It is widely recognized that significant people and events in a child's life are factors which will affect the child's behavior and ability to learn. Therefore, to understand the pupils in this study it was important to know about their social background and family constellations. Very few of the pupils were reported to have experienced physical neglect or abuse. One-tenth of the pupils had been separated from their mothers from four months to as long as eight years. A small proportion had been separated for a time from both parents.

As concern was expressed about the relationship of a pupil's family life to school functioning, events such as death, divorce and separation were examined in relationship to the date of the pupil's most recent psychological assessment. In most of the cases, such events, if they had occurred, had happened more than a year before the assessment rather than within the same year. In comparison to such events as illness, accident or mental illness of parents, family problems such as alcoholism, separation, marital conflict, abuse, or death of parents were more prevalent.

The incidence of family problems was similar to the percentage found in a study done by Koppitz (1971), who collected descriptive information on learning disabled pupils.

Results of studies have suggested that there may be a genetic influence on the incidence of academic difficulties (Matheny et al., 1976; Idol-Maestas, 1981). In the current study, it was found that one third of the pupils had family members who had school-related problems, with siblings being the most likely family members to be reported as lagging in academic achievement.

Family size and birth order were also examined. Most of the pupils typically came from four-person family units, having one sibling. Some studies have suggested that there may be a relationship between birth order and incidence of learning disabilities (Greer and Whitley, 1971; Idol-Maestas, 1981). In this study about one-third of the pupils were last and over one-fifth were first in the birth order. Also in one-fifth of the cases there was a large age difference (5 years or more) between pupil and siblings.

The majority of these pupils were full-term babies, with only 16.1% being reported to have had any type of mental and/or birth trauma. Most of the pupils and mothers of the pupils did not experience any complications or illnesses at or after birth; similar findings were reported by Koppitz (1971). Slow development of walking and talking occurred among one-fifth of the sample, as well as in one-fifth of Koppitz's sample.

In terms of the ages at which problems were first identified for these pupils, it is noteworthy that even at the Senior Kindergarten level, O.S.R. data revealed that one-third of the pupils had been identified by their teachers as lagging in

academic readiness skills. This figure increased to 85.9% by the end of Grade 1. The most commonly reported learning problem was underachievement in general or specific academic areas. Deficits in reading skills were the most commonly noted academic problem (37.6%), with mathematics as the most common secondary problem (14.5%). O.S.R. data also revealed difficulties with specific learning processes (such as receptive and expressive language, poor fine motor control) and inability to cope with classroom demands (difficulty following directions) in early grades. More than half the pupils in the current study had repeated at least one grade; this figure can be compared to a figure of more than one-third of pupils of similar educational background in a recently completed study by the Scarborough Board of Education (Dilling, Johns and Cheng, 1980).

Prior to placement in self-contained classes, over half the pupils had already received Special Education support. Among these pupils, more than half had attended Learning Centres as a withdrawal support program. Teachers also reported that the majority of pupils had received individualized academic assistance in the classroom setup. Homeroom teachers further reported that in substantial numbers of cases, they had modified classroom demands in the hope of enhancing pupils' learning styles. It is also worth noting that only 4 pupils were reported as being engaged in out-of-school programs.

Over one-half of the pupils had previous interaction with Psychological Services. Reasons for referral for psychological assessment immediately prior to placement in Learning Disabilities Self-Contained classes were made most frequently (64.9%) because pupils were perceived to be experiencing problems or difficulties.

Academic difficulties in reading were most common in this group (15.3%). A second type of difficulty noted in reasons for referral was related to specific learning processes. Other reasons for referral were: to re-evaluate present placement, to obtain more information about academic strengths and weaknesses, and in a small number of cases, to satisfy parental requests. It is also of interest that for these pupils it was relatively uncommon for the primary reason of referral to arise from perceived behavioral, social and emotional problems or difficulties in coping with classroom demands.

Since most referrals were made for academic reasons, the majority of psychological assessments were directed towards evaluation of cognitive and academic skills. Assessment measures were commonly used in conjunction with classroom observations and interviews. Other standardized measures were used to explore specific information processing skill areas; personality assessment measures were used infrequently.

The Ministry of Education definition of learning disability defines the phenomenon in cognitive terms. First, it states that there shall be a weakness or deficit in "one or more of the processes in understanding or using symbols or spoken language". Secondly, it specifies that these processing difficulties shall result in a significant discrepancy between the youngster's assessed intellectual ability and his/her academic achievement. The results of psychological assessment data reveal that pupils placed in Learning Disabilities Self-Contained classes in the City of Toronto seem to fulfill the requirements of the Ministry definition. The data presented in the present study have identified a variety of information processing deficits amongst

these children and have indicated that the vast majority perform worse academically than would be expected on the basis of their overall cognitive abilities. In terms of the information processing skill deficits, difficulties in visual performance areas and auditory language areas occur about equally often. Of the specific skill areas, problems in visual-motor coordination seem to occur more frequently; in general these pupils are quite distractible and have difficulty attending to academic tasks. (See also Koppitz, 1971.)

Additional common characteristics attributed to these children were low tolerance for frustration and poor self-esteem. One can hypothesize that distractibility is what makes programming for these pupils in regular classroom, or providing support for them through withdrawal programs so difficult. In general, distractible children do not have good work habits and cannot complete assigned tasks.

It should also be pointed out that while "hyperactivity" is one of the characteristics commonly discussed in the literature on learning disabilities, the findings of the current study indicate that only a small percentage of pupils had been diagnosed as hyperactive and were reported as receiving drug therapy.

The representative characteristics of these pupils can then be summarized as follows. The pupils who were entered in Learning Disabilities Self-Contained classes in 1981-1982 were predominantly boys eight to eleven years old. They came from homes where the mothers were less likely to be employed. Most of the pupils were born in Canada and most spoke only English. These pupils had usually received some Special Education support prior to placement in a Learning Disabilities Self-Contained program,

and had repeated at least one grade. Frequently their academic achievement was at least a year below their grade level. These pupils had typically received individual help in their regular classroom setting. They tended to be described as distractable and as having difficulty coping with classroom demands. They also tended to exhibit low self-esteem and a low frustration tolerance. The pupils were characterized by a significant discrepancy between their academic achievement and their assessed intellectual ability. Information processing skill deficits were documented in auditory language areas and visual performance areas.

Because of the descriptive nature of this study, the results cannot generalize beyond the sample examined. However, the information does provide answers to some of the questions about the nature of pupils currently placed in these classes. It will also provide a basis for a follow-up study of this population.

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APPENDIX A

MINUTES OF THE BOARD
(JULY 30, 1981, P.677-678)

Report No. 3 of the Status of Women Committee
Report No. 4 of the Canadian Content Committee

PART II

7. Students in Learning Disability Classes—Proposed Study on Background Factors, Educational History and Assessments

A report from the officials advised that as requested by the Learning Disabilities Workgroup, the above-noted research proposal has been developed to examine the characteristics of the students who enter self-contained learning disabilities programs in the Toronto system.

The purpose of this study is to review the assessments of these students to identify the constellations of difficulties associated with this placement and study whether or not these are related to such factors as socio-economic status, linguistic background, previous classroom placements (including their special education placements) and factors such as assessments by private agencies. This will require identifying the new placements, including attending the area wide IPRCs, analyzing the assessment data, collecting the background information on these students, including academic history. This data must be analyzed in a fashion which will permit identifying the different kinds, or categories, of problems that are placed in LD classes, the assessments and behavioural characteristics which have contributed to their identification and the relationship of background factors to these different groups.

The study will require a research assistant who will identify and locate the students and arrange for the necessary interviews with the person who made the referral, teacher and/or principal as well as the psycho-educational consultant who did the assessments to collect the information about the students. This would include the student's academic history, interventions which have been tried, linguistic background and SES. The research assistant would work ½ time September to December and full time January to July which would require $3,150.00 in occasional funds in 1981 and $11,000.00 in occasional funds, based on present salary levels.

To assist in interpreting and categorizing the information from the psychological assessments requires the skills and assistance of a trained school psychologist. It is proposed to use the services of a present employee of Psychological Services on a 25% basis over the 1981-82 school year. To compensate for the loss of direct service to schools necessitates the use of an occasional psycho-educational consultant. This would require $2,350.00 from the occasional budget in 1981 and $5,650.00 in 1982.

The hidden cost of this project which is not included in the budget is the extra load placed on the psycho-educational consultants and teachers and other school personnel who would have to take time to provide the information about the students placed in these self-contained classrooms for the first time in the 1981-82 school year.

It is recommended that the Research Department proceed with this study and that the sum of $6,500.00 in 1981 and $16,650.00 in 1982 be provided from the occasional budget for the necessary staff.

DENISE GOSNELL
Chairman of Committee

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APPENDIX B

DATA COLLECTION FORM

Serial No.___ ___ ___

PUPILS IN LEARNING DISABILITIES
SELF-CONTAINED CLASSES (1981-1982)

Pupil's Name: _____

Date of Birth: _____

Sex: _____

Present School: _____

Present Area: _____

Present Teacher: _____

Previous School: _____

Previous Area: _____

Previous Teacher: _____

Date Placement Recommended: _____

Date of Assessment: _____

Date of Arrival to SLD Class: _____

Data Collected: Pupil Information _____
Parent Information _____
Education Information _____
Psychological Data _____
Correlates of Learning Disabilities _____
Previous Teacher Interview _____
Present Teacher Contact _____

Tasks Completed: O.S.R. _____
Psychological File _____
Teacher's Report _____
Social Medical _____

Consent Forms:			
	Sent consent letter home	Yes	No
	Parent consented	Yes	No

Serial No. ___ ___ ___

I Pupil Information:

a) Biographical Data

1) I.D. Number: ___ ___ ___ ___ ___ ___

2) Date of Birth: Month __ __, Year 19__ __ ___ ___, ___ ___

3) Sex: Male 1 Female 2 ___

4) Regular Grade (1980-81): _____ ___ ___

5) Place of Birth: _____ (Ontario - 001) ___ ___ ___

6) Number of Years in Canada: _____ ___ ___

7) Languages spoken at home: _____ _____ ___ ___
_____

8) Who does pupil live with? ___

(i) Both parents: Both parents natural 1
Father natural 2
Mother natural 3
Child adopted 4

Single Parent: Father only 5
Mother only 6

Other: Relatives 7
Foster care 8
Other_____

(ii) If living with neither or only one parent, indicate parental situation: ___
Deceased 1 Divorced 3
Separated 2 Parenting Problems 4
Other_____ 5

(iii) Length of Time: Recent (within 1 year of assessment date) 1 ___
(of above More than 1 year 2
situation in [ii]).

(iv) Does parent visit? Frequently 1 Rarely 2 Never 3 ___

9) Number of related people living in the home?_____ ___

10) Number of unrelated people living in the home?_____ ___

11) Number of siblings_____ ___ ___

12) Are or were any of siblings in a Special Education program? ___

Yes 1 No 2

13) Have school-related problems been reported in the family? ___

No 1 Siblings 2 Mother 3 Father 4 Other 5_____

14) Pupil's Birth Order: ___

First 1 Middle 3
Second 2 Last 4

Serial No. ___ ___ ___

15) Pupil's sex in relation to siblings: ___

All same 1 All different 2 Mixed 3 N.A. 9

16) Is there a large age difference between pupil and siblings? ___

(i.e. 5 years of more) Yes 1 No 2

17) Was child adopted? No 1 Yes 2 ___

(i) If yes, does child know? Yes 1 No 2 ___

(ii) At what age_____ ___

b) Developmental Milestones and Medical History

18) Duration of pregnancy: Full-term 1 Short-term 2 ___

19) Complications during pregnancy: No 1 Yes 2 ___

(i) If yes, describe:_____

20) Delivery: Normal 1 Difficult 2 ___

21) Complications or illnesses for mother at or after birth: ___

No 1 Yes 2

(i) If yes, describe:_____

22) Complications or illnesses for pupil at or after birth: ___

No 1 Yes 2

(i) If yes, describe:_____

23) Birth Weight (in grams): ____ ____ 00 ___ ___

24) Were developmental milestones reached at appropriate stages? (pre-school age)

Yes 1 Delayed 2 Accelerated 3

(i) Motor development: _____ ___

(ii) Language development:_____ ___

25) Has the pupil experienced any of the following?

No 1 Yes, corrected or cured 2 Yes, still a problem 3

a) Visual difficulties___ ___

b) Hearing difficulties___ ___

c) Mixed Laterality___ ___

d) Allergies___ ___

e) Seizures ___

f) Encopresis (soiling) ____ ___

g) Enuresis (wetting) ____ ___

h) Hyperactivity _____ ___

i) Speech ___

j) Other ____ ___

26) Is or was drug therapy used for hyperactivity or related conditions? ____
(e.g. Ritalin)

Yes 1 No 2

Serial No. ___ ___ ___

27) Has the pupil experienced any of the following:

No 1 Yes 2

Major Illnesses_____ ___

Major Accidents_____ ___

Major Operations_____ ___

Recorded abuse by either parent_____ ___

28) Do reports note absenteeism as a problem? ___

No 1 Yes, health reasons 2
Yes, family reasons 3
Yes (truancy?) 4

29) Was pupil confined to home or hospital?
(Do not note if: less than 1 week in hospital)
(less than 2 weeks at home)

neither 0 home 1 hospital 2 both 3 ___

(i) If yes, note the total length of time_____ ___ ___
(in weeks)

30) From birth to five years did parents notice any of the following symptoms? Yes 1 No 2

a) Temper tantrums_____
b) Overactive_____ ___
c) Underactive_____ ___
d) Much crying_____ ___
e) Other_____ ___ ___

31) Separation from mother (longer than 1 month)

No 1 Yes 2

(i) If yes, how long?_____ ___ ___
(in months)

32) Separation from both parents: No 1 Yes 2

(i) If yes, describe:_____ ___

33) Has or is the pupil involved with any support services? ___

Yes 1 No 2

(i) Reason:

a) health_____ ___
b) social (family) _____ ___
c) social (child primarily) _____ ___
d) educational _____ ___

(ii) Process:

a) assessment only _____ ___
b) program of intervention _____ ___

Serial No. ___ ___ ___

II Parental Information:

a) Information About Father

1) Place of birth:_____ ___ ___ ___

2) Employed at present? No 1 Yes 2

(i) If yes, describe:_____ ___ ___

(ii) If not, describe situation:_____ ___ ___
(e.g., retired, welfare, disabled)

3) Has father experienced any of the following?

No 1 Yes 2

a) Serious illnesses or accidents_____ ___

b) Mental illness_____ ___

c) Significant family problems_____ ___

d) Nothing indicated 9 ___

b) Information About Mother

4) Place of birth:_____ ___ ___ ___

5) Highest grade attended:_____ ___ ___

Elementary 1
Some secondary (vocation) 2
Some secondary (academic) 3
Grade 12 completed (vocational) 4
Grade 12 completed (academic) 5
Grade 13 6
Post Secondary 7
University 8
Advanced Training 9

6) Was she educated in North America? Yes 1 No 2 ___

7) Employed at present? No 1 Yes 2

(i) If yes, describe:_____ ___ ___

(ii) If not, describe situation:_____ ___ ___
(e.g. housewife, welfare, student, etc.)

8) Has mother experienced any of the following?

No 1 Yes 2

a) Serious illnesses or accidents _____ ___
b) Mental illness _____ ___
c) Significant family problems _____ ___
d) Nothing indicated 9 ___

Serial No. ___ ___ ___

III Educational and Social History:

1) How many different schools has the pupil attended?_____ ___
(excluding recent change to SLD class)

(i) Did the moves occur in the middle of the school year? ___

Yes (over a third of time) 1 No 2

(ii) Did pupil return to a school more than one-third of his total time in school? ___

Yes 1 No 2

2) In what grade was a problem first noted?_____ ___ ___

3) What were the main learning difficulties?

_____ ___ ___ ___ ___

4) Other learning difficulties (secondary) ___ ___ ___ ___

_____

5) What were senior kindergarten observations concerning:

[satisfactory 1 unsatisfactory 2 N.I. 9]

a) gross motor development_____ ___
b) fine motor development_____ ___
c) language development_____ ___
d) social development_____ ___
e) emotional development_____ ___

6) Number of grades repeated_____ ___

7) Number of grades transferred_____ ___

(i) Length of time between Review Committee and placement in self-contained class (in months):_____ ___ ___

(ii) Did pupil get help during that time (excluding school-operated remedial help)? ___

Yes 1 No 2

8) (i) What Special Education program did pupil attend up to Review Committee (excluding school-operated remedial help)?

_____

_____

_____

(ii) Amount of time spent in a withdrawal program:_____ ___ ___
(in months)

(iii) Amount of time spent in a self-contained program:_____ ___ ___
(in months)

(iv) Parents' general reaction to Special Education placements. ___

Eager to have help 1
Mixed feelings, neutral, indifferent 2
Reluctant or unwilling 3
N.I. 9

Serial No.___ ___ ___

9) Academic performance as reported by previous (regular) teacher:

(i) Actual grade at time of rating:_____ ___

a) Grade level of reading_____ ___ ___

Strengths_____

Difficulties_____

b) Grade level of spelling_____ ___ ___

Strengths_____

Difficulties_____

c) Grade level of math_____ ___ ___

Strengths_____

Difficulties_____

d) Creative Expression _____ ___ ___

good or oustanding 1 ___

satisfactory or not mentioned 2 ___

unsatisfactory 3 ___

* 10) Pupil's approach to learning:

a) Response to approval or attention: ___

appreciates praise and attention 1 ___

responds negatively 2 ___

unconcerned about approval or disapproval 3 ___

b) Working by him/herself: ___

works steadily 1 unmotivated 2
only when watched or compelled 3

c) Working in a group: ___

works steadily 1 unmotivated 2
only when watched or compelled 3

d) Paying attention in class: ___

attends well 1 attends to anything but work 2
cannot get his/her attention 3

e) Seatwork activities: ___

sticks to job 1 switches from task to task 2
difficult to stimulate 3

f) Facing new tasks: ___

cautious but will try 1
lacks confidence to try anything difficult 2
likes challenge 3
hit and miss approach 4
shows indifference 5

---

* Categories adapted from the Bristol Social Adjustment Guides - The Child in School, developed by Stott (1971, 1975)

11) Is pupil aware of his problems (behavioral and learning)? ___

Yes 1 No 2

12) Does pupil have friends? None 1 ___
Only one or two 2
Some 3
N.I. 9

13) Organized activities: None 0 Sports 1 Clubs 2 Church 3 ___

Other:_____

14) Interests or hobbies at home: No 1 Yes 2 ___

(i) If yes, describe:_____

IV Psychological Data Obtained About the Pupil

1) Number of assessments given:_____ ___

2) Last assessment date: Month___ ___, Year 19__ __ ___ ___, ___ ___

3) Was there a psychiatric assessment? ___

Yes 1 No 2

4) When was the first assessment given? ___

in grade 1 1
in grade 2 2
within a year problem first noted 3
more than a year after problem first noted 4

5) Reason for referral (last assessment) _____ ___

_____

6) Were results from a private assessment incorporated in the psychological report? Yes 1 No 2 ___

7) Assessment included the following areas. List and specify measures used:

a) (i) Intellectual and cognitive skills:

used 1 not used 2
used, not complete 3
WISC-R_____ ___
Raven Progressive Matrices_____ ___
Coloured Progressive Matrices_____ ___
PPVT_____ ___
Stanford-Binet_____ ___
Other_____ ___

(ii) Were there discrepancies between VERBAL AND PERFORMANCE measures on the WISC-R? ___

No 1 Yes, in favor of VERBAL 2
Yes, in favor of PERFORMANCE 3

(iii) What was the discrepancy? No discrepancy 0 ___
1 S.D. (15 points or more) 1
1.5 S.D. (22 points or more) 2
2 S.D. (over 30 points) 3

b) Perceptual-motor tasks (measures used):

used 1 not used 2 used, not complete 3

I Bender-Gestalt _____ ___
lag (in years) _____ ___

II Slingerland _____ ___
lag (in years) _____ ___
Wepman Auditory Discrimination Test _____ ___
Detroit _____ ___
I.T.P.A. _____ ___

c) Achievement measures:

used 1 not used 2 used, not complete 3
W.R.A.T._____ ___
Durrell_____ ___
Monroe-Sherman_____ ___
Other_____ ___

(i) W.R.A.T.: grade level when it was given_____ ___
Reading grade level_____ ___
No. of years below grade level_____ ___

Spelling grade level_____ ___
No. of years below grade level_____ ___
Math grade level _____ ___
No. of years below grade level _____ ___

(ii) Durrell: _____grade level_____ ___
No. of years below grade level_____ ___

_____grade level_____ ___
No. of years below grade level_____ ___

(iii) Monroe-Sherman: _____grade level_____ ___
No. of years below grade level_____ ___

_____grade level_____ ___
No. of years below grade level_____ ___

(iv) What were the discrepancies between assessment findings and teachers' reports on academic performance for the following?

None 1 Above assessment findings 2
Below assessment findings 3
Comparison not possible 4

Reading_____ ___
Spelling_____ ___
Math_____ ___

d) Personality Tests:

(i) Was D-A-P given? ___

Yes, no comment 1 given, within normal range 2
given immature for age 3
not given 9

(ii) Other tests used: ___

_____

Serial No.___ ___ ___

8) Were there significant discrepancies between academic achievement and assessed intellectual ability? ___

No 1 Yes, in favor of academic 2
Yes, in favor of intellectual 3
Comparison not possible 4

* V) Cognitive Correlates

[Strength 1 Weakness 2]

i) Language (verbal comprehension) ___
ii) Visual Performance (perceptual organization) ___ ___
iii) Concentration Span (Distractability) ___ ___
___

Information Processing Skills:

[Strength 1 Weakness 2]

i) Reasoning:

1) Abstract Reasoning _____ ___

___ Similiarities
___ Block Design
___ Raven Matrices
___ Some ITPA Subtests
___ Detroit
___ Teacher's report
___ Other _____

2) Concrete Reasoning _____ ___

___ Comprehension
___ Object Assembly
___ Picture Arrangement
___ Teacher's report
___ Other _____

ii) Specific Auditory Language Areas:

1) Attention and/or Short-Term Memory ____ ___

____ Digit Span
____ Detroit Memory for words, sentences
____ ITPA Auditory Memory
____ Slingerland
____ Teacher's report
____ Other _____

---

* Analysis of Information Processing Skills based on a review of recent psychological literature - with a special focus on the work of Kaufman (1975, 1979) and Bannatyne (1971, 1975).

2) Receptive Language _____ ___

___ PPVT

___ ITPA (some subtests)

___ trouble following instructions on Comprehension, Arithmetic, Picture Arrangement Subtests

___ Difficulty following instructions in class

___ Might ask to have things repeated

___ Teacher would describe him as not understanding

___ Other _____

3) Oral Expression _____ ___

___ ITPA

___ Quality of verbal response to Information, Vocabulary, Similiarities, Comprehension Subtests.

___ Teacher's Observations

___ Picture stories

___ Other _____

4) Acquired Knowledge _____ ___

___ Information

___ Arithmetic

___ Vocabulary

___ Teacher's report

___ Other _____

5) Auditory Discrimination _____ ___

___ Wepman

___ Teacher's comments

___ Other _____

6) Sequential Organization _____ ___

___ Digit Span

___ Word pronunciation ("pasgetti")

___ Teacher's report

___ Other _____

iii) Specific Visual Performance Skills:

1) Attention and/or short-term memory ____ ___

___ ITPA Memory Subtest

___ Slingerland

___ Benton
___ Recall of Bender designs
___ Teacher's report
___ Other _____

2) Sequential Organization _____ ___
___ Coding
___ Picture Arrangement
___ Transpositions
___ Teacher's reports
___ Other

3) Spatial Organization _____ ___
___ how information is organized on paper
___ Bender designs
___ Class work
___ Drawings
___ Reversals
___ Teacher's reports
___ Other _____

4) Visual-Motor Co-ordination _____ ___
___ Block Design
___ Object Assembly
___ Coding
___ Mazes
___ Bender
___ Teacher's report
___ Other _____ ___

5) Visual Memory Long-Term _____ ___
___ Object Assembly
___ Picture Completion
___ Retaining sight words
___ Drawings
___ Teacher's report
___ Other _____

VI Emotional and Social Correlates:

a) Motivational Impediments to Learning _____ ___

highly motivated 1 poorly motivated 2

b) Depressive symptoms_____ ___
(e.g. withdrawal, helplessness)

present 1 not present 2

c) Anxiety_____ ___

present 1 not present 2

d) Distractability_____ ___

highly distractable 1 occasionally 2 freedom from distractability 3

e) Maturity_____ ___

immature 1 mature 3

f) Impulsive learning style_____ ___

Yes 1 No 2

g) Self-esteem_____ ___

lowered self-esteem/negative self-concept 1
high self-esteem/positive self-concept 2

h) Aggressive, acting-out behavior_____ ___

frequently 1 occasionally 2 never 3

i) Social skills_____ ___

difficulty with peers 1
difficulty with adults 2
difficulty with adults and peers 3
well developed skills with adults and peers 4

j) frustration _____ ___

high tolerance 1 low tolerance 2

k) Other _____ ___

_____

APPENDIX C

KAUFMAN'S METHOD OF ANALYZING WISC-R SUBTEST SCORES

KAUFMAN'S METHOD OF ANALYZING WISC-R SUBTEST SCORES

Kaufman's method of WISC-R interpretation advances the use of a constant difference of ± 3 points from the child's verbal or performance mean scaled score to determine the significance of the deviation of any subtest (Range: 2.3-3.3). According to Kaufman, the following steps should be followed in determining significant strengths and weaknesses in the scaled score profile:

1. Compute the mean scaled score of the verbal subtests administered, and then do the same for all performance subtests administered. Round each mean to the nearest whole number.

2. Examine the verbal scaled scores and check off all values that are 3 or more points above the verbal mean. These are significant strengths for the child and should be labelled with a capital 'S'. Then check off all values that are 3 or more points between the verbal mean and label them 'W' to signify weaknesses.

3. Examine the performance scaled scores as discussed in item 2.

4. Treat all scaled scores that did not deviate significantly from the appropriate mean as chance fluctuations. They should not be interpreted as strengths or weaknesses per se but may be used to support hypotheses.

5. Each scaled score is systematically compared to the child's own midpoint, with statistically significant differences used to determine meaningful fluctuations.

Using the midpoint as the form of reference also serves the function of assuring that strengths and weaknesses will be relative to the child's own level of ability on each scale.

APPENDIX D

LETTERS AND CONSENT FORMS

THE BOARD OF EDUCATION FOR THE CITY OF TORONTO
155 College Street, Toronto M5T 1P6, Canada, 598-4931

Dear Mr./Mrs. _____

The Learning Disabilities Workgroup of the Toronto Board of Education has developed a research proposal to examine the characteristics of those students who enter self-contained Learning Disabilities Programs in the Toronto system. This information is required to allow the Board of Education to refine its programs for children with learning disabilities.

We note that your child, _____, has recently entered a Learning Disabilities class. We seek your permission to examine information gathered as part of the decision-making process when your child was recommended for a Learning Disabilities Program. These documents are likely to include psychological and social work reports as well as teachers' evaluations.

Information pertaining to individual children will be kept strictly confidential by the Research Team and final reporting will only include summary statistical information compiled from many children's records.

We hope you will provide assistance to our Research Project.

Kindly sign this form below and mail it to the Research Department. A self-addressed envelope is enclosed with this letter.

PROJECT NO._____

I grant permission for the Learning Disabilities Research Team of the Toronto Board of Education to have access to information gathered by the Student Services Department concerning my child,

_____.
(name)

_____ _____
(Date) Signature of Parent or Guardian

3/11/81

Edward N. McKeown, Acting Director of Education/Ronald W. Halford, Acting Associate Director of Education
Mitchell Lennox, Superintendent of Professional Services/Donald G. Rutledge, Superintendent of Curriculum & Program
Helen I. Sissons, Superintendent of Personnel/Michael J. Rose, Comptroller of Buildings and Plant/David S. Paton, Comptroller of Finance

THE BOARD OF EDUCATION FOR THE CITY OF TORONTO
155 College Street, Toronto M5T 1P6, Canada, 598-4931

Dear Mr./Mrs._____

The Toronto Board of Education is trying to better understand pupils in Learning Disabilities Classes. To do this the Research Department is summarizing information about these pupils.

Because information collected by the psychoeducational consultant and the social worker is treated confidentially, we are asking your permission to collect the information about your child, _____, from their records. We also will treat the information confidentially and will be dealing with it only in summary form without identifying any individual pupils.

We wrote you earlier, however we did not hear from you, and we are asking again because the information is important in helping the school system make plans for helping pupils with learning difficulties.

If you have any questions, please phone the Research Department of the Toronto Board of Education at 598-4931 and ask for Ann Winter (ext. 393) or Dr. E. Wright (ext. 432).

Please sign this form below and return it as soon as you can conveniently do so, in the enclosed envelope to the Research Department.

PROJECT NO._____

I give my permission for the Research Department of the Toronto Board of Education to consult psychological and social work records on my child, _____. This information is to be used for the Board's study of learning disabilities and will not identify my child by name.

_____ Date

_____ Signature of Parent or Guardian

24/2/82

Edward N. McKeown, Acting Director of Education/Ronald W. Halford, Acting Associate Director of Education
Mitchell Lennox, Superintendent of Professional Services/Donald C. Rutledge, Superintendent of Curriculum & Program
Helen I. Sissons, Superintendent of Personnel/Michael J. Rose, Comptroller of Buildings and Plant/David S. Paton, Comptroller of Finance

APPENDIX E

ADDITIONAL TABLES

TABLE 38

FAMILY STATUS OF L.D. PUPILS' PARENTS

Status	Number	Percent
Deceased	49	19.2
Separated	5	2.0
Divorced	18	7.1
Other	3	1.2
Not applicable	152	59.6
No information	28	11.0
Total	255	100.1% *

* Does not equal 100.0% due to rounding of fractions.

NOTE: Records indicated that 8 pupils had experienced the above change in family status less than one year previous to their assessment.

TABLE 39

ILLNESS, ACCIDENTS, MENTAL ILLNESS, FAMILY PROBLEMS
EXPERIENCED BY MOTHER
(in Percent: N = 255)

Category *	Yes	No	No Information
Serious Illness or Accident	9.0	80.0	11.0
Mental Illness	5.5	83.9	10.6
Family Problems	32.5	56.9	10.6

* See Table 41 for categories.

TABLE 40

ILLNESS, ACCIDENTS, MENTAL ILLNESS, FAMILY PROBLEMS
EXPERIENCED BY FATHER
(in Percent: N = 255)

Category *	Yes	No	No Information
Serious Illness or Accident	7.8	76.9	15.9
Mental Illness	1.6	83.5	14.9
Family Problems	22.0	63.1	14.9

* See Table 41 for categories.

TABLE 41

EVENTS CATEGORIZED AS SERIOUS ILLNESSES OR ACCIDENTS, MENTAL ILLNESS AND FAMILY PROBLEMS

Category	Event
Serious Illness or accident	Severe industrial accident, chronic migraines, malignant carcinoma, diseased lung, chronic backaches, mild epilepsy, severe arthritis, asthma, bullet shot to leg, cancer of uterus, viral hepatatis
Mental Illness	Depression, insomnia, alcohol-related problems, "nervous breakdown"
Family Problems	Alcoholism, separation, divorce, financial problems, still-born baby, mentally retarded child, spouse killed in an accident, spouse abusive, many moves, child required many operations, relatives killed in earthquake in Italy, child died, spouse seldom at home, house burnt down.

NOTE: Idol-Maestas (1981) found that the presence of alcohol problems in the family was a strong predictor of incidence of central language problems and hyperactivity in children.

TABLE 42

SEPARATION OF PUPIL FROM MOTHER **

Length of Separation (in months)	Number	Percent
1 month or less ***	201	78.8
4	1	0.4
6	2	0.8
7	1	0.4
8	1	0.4
10	1	0.4
11	3	1.2
12	1	0.4
22	2	0.8
24	1	0.4
29	2	0.8
36	4	1.6
48	2	0.8
60	1	0.4
No Information	31	12.2
Total	255	99.8 *

* Does not equal 100.0% due to rounding of fractions.

** NOTE: The following instances were considered to be separation: separation due to divorce, with the mother no longer visiting; desertion by the mother; immigration to Canada before the pupil.

*** NOTE: 1 month or less was not considered to be separation.

TABLE 43

SEPARATION OF PUPIL FROM BOTH PARENTS *

Category	Number	Percent
No	208	81.6
Yes	21	8.2
No Information	26	10.2
Total	255	100.0

* NOTE: Separation was coded in cases other than hospitalization, such as immigration at a different time than the pupil.

TABLE 44

NUMBER OF RELATED PEOPLE LIVING IN HOUSEHOLD

Number of Related People	Number	Percent
0	1	0.4
2	11	4.3
3	19	7.5
4	79	31.0
5	55	21.6
6	32	12.5
7	19	7.5
8	3	1.2
9	6	2.4
10	2	0.8
No Information	28	11.0
Total	255	100.2 *

* Does not equal 100.0% due to rounding of fractions.

NOTE: In two cases, one unrelated person was reported as living in the household,and in three cases,there were two unrelated household members reported.

TABLE 45

COMPLICATIONS EXPERIENCED BY PUPILS' MOTHERS
DURING THEIR PREGNANCIES

Category *	Number	Percent
None	179	70.2
Yes	41	16.1
No Information	35	13.7
Total	255	100.0

* NOTE: A condition was coded as a complication if it included one or more of the following: alcoholism, toxemia, abuse, low blood pressure, anemia, emotional difficulties, marital problems, financial difficulties, excessive weight, blood clotting, membranes broke several times, and difficulty in walking. Nausea, vomiting and headaches were not considered complications.

TABLE 46

COMPLICATIONS EXPERIENCED BY THE PUPILS'
MOTHERS AT OR AFTER BIRTH

Category **	Number	Percent
None	213	83.5
Yes	9	3.5
No Information	33	12.9
Total	255	99.9 *

* Does not equal 100.0% due to rounding of fractions.

** A condition was noted as a complication or illness for the mother if one or more of the following took place: circulatory problems, many operations after the birth, depression accompanied by medication.

TABLE 47

COMPLICATIONS EXPERIENCED BY THE PUPILS AT OR AFTER BIRTH

Category *	Number	Percent
None	185	72.5
Yes	36	14.1
No Information	34	13.3
Total	255	99.9 **

* NOTE: A complication or illness for the pupil at or after birth could have been any one of the following: low birth weight (i.e. under 2250 grams), cerebral palsy, congenital hip disease, jaundice, chest problems, breathing problems, Turner's Syndrome, Salmonella poisoning, congenital heart murmer, mild allergy, hydrocephalic, fetal distress needing blood transfusions, oversized shoulder, swollen head, damage to temple bone, inhalation of fluid which caused pneumonia, cleft palate.

** Does not equal 100.0% due to rounding of fractions.

TABLE 48

MAJOR ILLNESSES, ACCIDENTS, OPERATIONS AND ABUSE EXPERIENCED BY PUPILS
(in Percent: N = 255)

Categories *	No	Yes	No Information
Major Illnesses	61.6	29.4	9.0
Major Accidents	83.9	7.5	8.6
Major Operations	72.2%	19.2%	8.6%
Instances of Child Abuse	86.3%	4.7%	9.0%

* See Table 49 for categories.

TABLE 49

EVENTS CATEGORIZED AS MAJOR ILLNESSES, ACCIDENTS, OPERATIONS AND CHILD ABUSE

Category	Event
Major Illness	Items such as earaches, frequent colds and coughs, heart murmur or draining of ears were not noted as major illnesses. Examples of the kinds of illnesses coded as major are as follows: fever with convulsions, chronic diarrhea, severe flu, pneumonia, severe ear infections, colitis, gastro-enteritis, anemia, chronic bronchitis, low clotting, high fever accompanied by vomiting, diabetes, asthma, dehydration and virus, scarlet fever, breathing problems, viral meningitis, frequent tonsilitis, heart problems, salmonella with fever and hallucinations, bleeding, tracheitis, rubella, kidney and pelvic infection, lead poisoning, respiratory infections, inflammation of the hip and bladder trouble.
Major Accidents	Electrical burn to mouth, swallowed bottle of aspirin, nearly drowned in pool, hit in head needing stitches, hairline skull fracture, broken collar bone, blood in urine as a result of being kicked in groin, concussion as a result of a fall. Routine fractures and childhood mishaps, or falls resulting in no serious injuries, were not coded as major accidents.
Major Operations	Hernia, eye, club feet, congenital hip or cleft palate surgery, plastic surgery, removal of adenoids, appendix, tonsils, operation on bowel and circumcision at age four.
Instances of Child Abuse	Malnutrition was included as a form of abuse.

TABLE 50

PERCENTAGE OF STUDENTS
WHO HAVE RECEIVED SUPPORT SERVICES
(in Percent: N = 255)

Number of Services	Number	Percentage
0	156	61.2
1	53	20.8
2	33	12.9
3	12	4.7
4	1	0.4
Total	255	100.0

TABLE 51

TYPES OF SUPPORT SERVICES RECEIVED BY PUPILS
(in Percent: N = 255)

Categories	Yes	No	No Information
Health	20.0%	72.2%	7.8%
Social (Family)	11.8%	80.4%	7.8%
Social (Child)	16.1%	76.4%	7.8%
Educational	14.5%	77.6%	7.8%

TABLE 52

SERVICES PROVIDED
(in Percent: N = 255)

Categories	Yes	No	No Information
Assessment	27.5%	64.3%	8.2%
Intervention	23.1%	68.6%	8.2%

TABLE 53

NUMBER OF SUPPORT SERVICES
RECEIVED BY THE PUPILS
(in Percent)

Category	Only Service	1 Other Service	2 Other Services	3 Other Services
Educational (N=37)	27.0%	40.5%	29.7%	2.7%
Social(Family) (N=30)	40.0%	46.7%	10.0%	3.3%
Social (Child) (N=41)	34.1%	34.2%	29.3%	2.4%
Health (N=51)	33.3%	45.1%	19.6%	2.0%

TABLE 54

PRIMARY LEARNING DIFFICULTIES REPORTED BY TEACHER

Learning Difficulties	First Difficulty Mentioned	Second Difficulty Mentioned	Third Difficulty Mentioned	Total N (%) *
reading, difficulty with letters and their sounds	74	19	3	96 (37.6)
short attention span	29	21	6	56 (22.0)
distractable	25	13	4	42 (16.5)
fine motor co-ordination, eye-hand coordination	10	21	2	33 (12.9)
math, number skills	5	21	2	28 (11.0)
difficulty following class routines, directions	19	3	6	28 (11.0)
language areas (expressive, reading, receptive)	10	7	5	22 (8.6)
expressive language, poor communication skills	9	10	3	22 (8.6)
written work, handwork, printing	9	9	4	22 (8.6)
immature	9	4	5	18 (7.1)
speech problems	9	2	1	12 (4.7)
lacks skills/weak in subject areas, little academic progress	6	1	2	9 (3.5)
withdrawn behavior	3	4	1	8 (3.1)
low self image	3	2	2	7 (2.7)
behavior problems	2	4		6 (2.4)
spelling	2	2	1	5 (2.0)
aggressive	3	2		4 (1.6)
high anxiety	1	1	1	3 (1.2)

(Continued)

TABLE 54 (Continued)

PRIMARY LEARNING DIFFICULTIES REPORTED BY TEACHER

Learning Difficulties	First Difficulty Mentioned	Second Difficulty Mentioned	Third Difficulty Mentioned	Total N (%) *
difficulty with peers	2	1		3 (1.2)
easily frustrated	2	2		4 (1.6)
craves attention	1	3		4 (1.6)
not independent, cannot work independently, needs constant supervision	2	2		4 (1.6)
reversals	1	1	2	4 (1.6)
difficulty retaining words	2			2 (0.8)
receptive language		2		2 (0.8)
written language			2	2 (0.8)
visual memory weak	1	1		2 (0.8)
poor work habits		2		2 (0.8)
poor listening skills	1	1		2 (0.8)
emotional problems		1	1	2 (0.8)
limited motivation		1	1	2 (0.8)
little self-discipline/ self control		2		2 (0.8)
vocabulary		1		1 (0.4)
gross & fine motor difficulties		1		1 (0.4)
auditory discrimination	1			1 (0.4)
slow development in S.K.	1			1 (0.4)
moody		1		1 (0.4)

(Continued)

TABLE 54 (Continued)

PRIMARY LEARNING DIFFICULTIES REPORTED BY TEACHER

Learning Difficulties	First Difficulty Mentioned	Second Difficulty Mentioned	Third Difficulty Mentioned	Total N (%) *
problems working in a group		1		1 (0.4)
works slowly		1		1 (0.4)
having hearing problems resulting in difficulty following instructions	1			1 (0.4)
inappropriate, bizzare answers to questions		1		1 (0.4)
hyperactive	1			1 (0.4)
unable to handle pressure	1			1 (0.4)
learning and emotional problems	1		1	2 (0.8)
No information	9			9
Total	255	171	55	481

* The percentages were calculated based on N = 255.

TABLE 55

SECONDARY LEARNING DIFFICULTIES REPORTED BY TEACHER

Learning Difficulties	First Difficulty Mentioned	Second Difficulty Mentioned	Third Difficulty Mentioned	Total N (%) *
math, number skills	27	8	2	37 (14.5)
fine motor co-ordination, eye-hand co-ordination	11	5	1	17 (6.7)
written work, handwork, printing	12	1		13 (5.1)
reading, difficulty with letters and their sounds	8	2		10 (3.9)
short attention span	3	2		5 (2.0)
immature	4	1		5 (2.0)
language areas (expressive, reading, receptive)	3		1	4 (1.6)
distractable	2		1	3 (1.2)
low self image	1	2		3 (1.2)
difficulty with peers	1	1		2 (0.8)
limited motivation	2			2 (0.8)
expressive language, poor communication skills	2			2 (0.8)
spelling	1		1	2 (0.8)
visual discrimination	1			1 (0.4)
visual memory weak		1		1 (0.4)
spatial organization	1			1 (0.4)
auditory discrimination		1		1 (0.4)
receptive language	1			1 (0.4)
poor listening skills		1		1 (0.4)
difficulty following class routines, directions	1			1 (0.4)

(Continued)

TABLE 55 (Continued)

SECONDARY LEARNING DIFFICULTIES REPORTED BY TEACHER

Learning Difficulties	First Difficulty Mentioned	Second Difficulty Mentioned	Third Difficulty Mentioned	Total N (%) *
failure to complete work		1		1 (0.4)
poor memory for tasks taught to him/her	1			1 (0.4)
avoids eye contact with teacher	1			1 (0.4)
reacts negatively to adult attention	1			1 (0.4)
aggressive		1		1 (0.4)
high anxiety		1		1 (0.4)
easily frustrated	1			1 (0.4)
not assertive			1	1 (0.4)
impulsive learning	1			1 (0.4)
physically immature		1		1 (0.4)
lack skills/weak in subject areas, little academic progress	1			1 (0.4)
No information	168			168
Total	255	29	7	291

* The percentages were calculated based on N = 255.

TABLE 56

NUMBER OF SCHOOLS ATTENDED BY PUPILS
(OTHER THAN THE SCHOOL ATTENDED IN 1981-1982)

Number of Schools*	Number	Percent
0	33	12.9
1	73	28.6
2	73	28.6
3	32	12.5
4	18	7.1
5	11	4.3
6	7	2.7
No Information	8	3.1
Total	255	99.8**

* NOTE: The results indicated that 24 pupils changed schools in middle of the school year.

** Does not equal 100.0% due to rounding of fractions.

TABLE 57

INCIDENCE OF ABSENTEEISM FROM SCHOOL

Category	Number	Percent
No	188	73.7
Yes, Health Reasons	26	10.2
Yes, Family Reasons	9	3.5
Yes, Truancy	15	5.9
No Information	17	6.7
Total	255	100.0

NOTE: Records often did not specify the specific number of days absent, but rather indicated whether or not absenteeism had been a problem.

TABLE 58

AMOUNT OF TIME IN SPECIAL EDUCATION WITHDRAWAL PROGRAMS
(in Months)

Time (in Months)	Number	Percent
0	85	33.3
1 - 9	35	13.9
10 (1 year)	40	15.7
11 - 19	24	9.6
20 (2 years)	22	8.6
23 - 29	9	3.6
30 (3 years)	11	4.3
33 - 50	13	5.2
No information	16	6.3
Total	255	100.5% *

* Does not equal 100.0% due to rounding of fractions.

NOTE: There were 13.3% of the pupils who had spent from 5 months to 5 years in a self-contained program. This table cannot be matched exactly to Table 20 because some pupils were in more than one program.

TABLE 59

PERCENTAGE OF PUPILS BELOW GRADE LEVEL
IN READING, SPELLING AND MATHEMATICS IN 1981-82

Grade (1981-1982)	(Percentage Below Grade Level) Reading	Spelling	Math
1	5.0	0.0	10.0
2	90.9	66.7	53.6
3	90.0	94.4	67.5
4	91.4	90.9	88.8
5	100.0	100.0	89.3
6	100.0	100.0	82.6
7	100.0	75.0	100.0

TABLE 60

PUPIL'S RESPONSE TO APPROVAL OR ATTENTION

Category	Number	Percent
Appreciates praise and attention	129	50.6
Responds negatively	4	1.6
Unconcerned about approval or disapproval	6	2.4
No information	116	45.5
Total	255	100.1 *

* Does not equal 100.0% due to rounding of fractions.

TABLE 61

PUPIL'S LEARNING STYLE WHEN WORKING BY HIM/HERSELF

Category	Number	Percent
Works steadily	48	18.8
Unmotivated	10	3.9
Only when watched or compelled	181	71.0
No information	16	6.3
Total	255	100.0

TABLE 62

PUPIL'S LEARNING STYLE WHEN WORKING IN A GROUP

Category	Number	Percent
Works steadily	49	19.2
Unmotivated	8	3.1
Only when watched	184	72.2
No information	14	5.5
Total	255	100.0

TABLE 63

PUPIL'S LEVEL OF ATTENTION IN CLASS

Category	Number	Percent
Attends well	47	18.4
Attends to anything but work	111	43.5
Cannot get his/her attention	57	22.4
No information	40	15.7
Total	255	100.0

TABLE 64

PUPIL'S LEARNING STYLE WHEN DOING SEATWORK

Category	Number	Percent
Sticks to job	40	15.7
Switches from task to task	52	20.4
Difficult to stimulate	96	37.6
No information	67	26.3
Total	255	100.0

TABLE 65

PUPIL'S LEARNING STYLE WHEN FACING NEW TASKS

Category	Number	Percent
Cautious but will try	19	7.5
Lacks confidence to try anything difficult	57	22.4
Likes challenge	5	2.0
Hit and miss approach	6	2.4
Shows indifference	9	3.5
No information	159	62.4
Total	255	100.2 *

* Does not equal 100.0% due to rounding of fractions.

TABLE 66

NUMBER OF FRIENDS PUPILS HAVE

Category	Number	Percent
None	12	4.7
One or Two	46	18.0
Some	142	55.7
No Information	55	21.6
Total	255	100.0

TABLE 67

PUPIL'S PARTICIPATION IN ORGANIZED ACTIVITIES

Category	Number	Percent
None	20	7.8
Sports	61	23.9
Clubs	15	5.9
Church	6	2.4
Music	7	2.7
Language	14	5.5
Arts and Crafts	1	0.4
Dance	1	0.4
Two or more activities	55	21.6
No information	75	29.4
Total	255	100.0

TABLE 68

PUPIL'S HOBBIES

Category	Number	Percent
None	10	3.9
Television	24	9.4
Reading	1	0.4
Arts and Crafts	18	7.1
Physical activities	36	14.1
Games - Puzzles	3	1.2
Two or more hobbies	56	22.0
No information	107	42.0
Total	255	100.1 *

* Does not equal 100.0% due to rounding of fractions.

TABLE 69

MODIFICATIONS OF REGULAR CLASSROOM PROGRAM

Modification	First Modif. Mentioned	Second Modif. Mentioned	Third Modif. Mentioned	Total N (%) *
Individual help in class in certain subject areas	59	44	35	138 (54.1)
Works at individual level and rate in certain subject areas or in all areas	29	15	6	50 (19.6)
Learning Centre	39	9		48 (18.8)
Small group instruction at student's own level	13	10	3	26 (10.2)
Reading Clinic	9	4	1	14 (5.5)
Given easier tasks to complete	7	4		11 (4.3)
Teacher accepts whatever student accomplishes/ lowered classroom expectations	6	3		9 (3.5)
Much reinforcement and review of skills	2	3	3	8 (3.1)
ESL help	4	3		7 (2.7)
Special Education withdrawal	5	1	1	7 (2.7)
Speech withdrawal	2	3	2	7 (2.7)
Sits close to teacher so won't lose student easily	2	1	2	5 (2.0)
Special Program Junior/ Primary (withdrawal)	5			5 (2.0)
Dictates information	2	2	1	5 (2.0)
Receives extra help after regular school hours		2	3	5 (2.0)

(Continued)

TABLE 69 (Continued)

MODIFICATIONS OF REGULAR CLASSROOM PROGRAM

Modification	First Modif. Mentioned	Second Modif. Mentioned	Third Modif. Mentioned	Total N (%) *
Most instruction with student on individual basis	5			5 (2.0)
Extra activities such as lego, cutting, for fine motor skills		2	2	4 (1.6)
Allowing him to express through more art work than written work	1	2	1	4 (1.6)
Works with children younger than herself in certain subject areas	2	1		3 (1.2)
Sits by himself instead of at a table	3			3 (1.2)
Individual help with volunteer in certain subject areas	2	1		3 (1.2)
Not expected to finish seatwork as the others	2	1		3 (1.2)
Special phonics technique to reading	1	1		2 (0.8)
Itinerant Learning Disabilities	2			2 (0.8)
Extra attention and encouragement	2			2 (0.8)
Receives tutoring outside of the school	2			2 (0.8)
Attends activity program for fine and gross motor skills and for interaction with peers in a one-to-one and small group	1			1 (0.4)

(Continued)

TABLE 69 (Continued)

MODIFICATIONS OF REGULAR CLASSROOM PROGRAM

Modification	First Modif. Mentioned	Second Modif. Mentioned	Third Modif. Mentioned	Total N (%) *
Attends school-operated fine and gross motor program	2			2 (0.8)
Uses behavior modification ideas/techniques	1			1 (0.4)
Given less work than others		1		1 (0.4)
Encouraged to do and complete work	1			1 (0.4)
Focus on increasing attention span			1	1 (0.4)
Students (classmates) help in subject area		1		1 (0.4)
Use of tape recorder to practice sound identifications	1			1 (0.4)
Tells stories with picture cards rather than word cards		1		1 (0.4)
Encouraged to speak in small groups		1		1 (0.4)
Small group with volunteer		1		1 (0.4)
Limited class size		1		1 (0.4)
Repeated the grade	1			1 (0.4)
Special Program Behavioral	1			1 (0.4)
Special class Reading	1			1 (0.4)
Transitional class	1			1 (0.4)

(Continued)

TABLE 69 (Continued)

MODIFICATIONS OF REGULAR CLASSROOM PROGRAM

Modification	First Modif. Mentioned	Second Modif. Mentioned	Third Modif. Mentioned	Total N (%) *
Self-contained reading		1		1 (0.4)
Itinerant Behavioral		1		1 (0.4)
Mandelcorn Clinic (withdrawal/half day)	1			1 (0.4)
Came to school half days to alleviate frustration			1	1 (0.4)
Uses a timer to work more quickly		1		1 (0.4)
Stickers given for good work			1	1 (0.4)
Liaison with home to develop concentration in work completion and task orientation		1		1 (0.4)
Uses computer to reinforce spelling and math			1	1 (0.4)
Tracking and visual motor exercises emphasizing left to right progression	1			1 (0.4)
Visual discrimination exercises emphasizing reversals, reversed order		1		1 (0.4)
Working in SRA linguistic reading series			1	1 (0.4)
Teacher explains things slowly	1			1 (0.4)

(Continued)

TABLE 69 (Continued)

MODIFICATIONS OF REGULAR CLASSROOM PROGRAM

Modification	First Modif. Mentioned	Second Modif. Mentioned	Third Modif. Mentioned	Total N (%) *
Given jobs around class that others don't do, so she can be given extra praise to increase sense of importance in the eyes of the students and herself	1			1 (0.4)
Helps younger kids in reading and math		1		1 (0.4)
Instructions are repeated		1		1 (0.4)
No information	35			35
Total	255	125	65	445

* The percentages were calculated based on N = 255.

TABLE 70

REASON FOR REFERRAL FOR
LAST PSYCHOLOGICAL ASSESSMENT

Reason	First Reason Mentioned	Second Reason Mentioned	Third Reason Mentioned	Total N (%) *
Poor academic achievement/progress academic difficulty	58	6	3	67 (26.3)
An update on previous testing, re-assessment	34	5	1	40 (15.3)
Reading below grade level, reading difficulties	28	10	1	39 (15.3)
Assessment for Special Education placement	17	17	2	36 (14.1)
Re-evaluation of present placement	22	9	1	32 (12.5)
Short attention span	4	12	3	19 (7.5)
Fine motor control poor, poor printer	7	5	7	19 (7.5)
To determine academic needs, appropriate placement	13	2	2	17 (6.7)
Slow progress in language	11	1	2	14 (5.5)
To determine if there is a learning disability, perceptual problem	10	2	2	14 (5.5)
Marked difficulty in subject area in spite of daily remedial help	7	4		11 (4.3)
Math below grade level, math difficulties	2	6	2	10 (3.9)
Behavioural problems		6	1	7 (2.7)

(Continued)

TABLE 70 (Contnued)

REASON FOR REFERRAL FOR
LAST PSYCHOLOGICAL ASSESSMENT

Reason	First Reason Mentioned	Second Reason Mentioned	Third Reason Mentioned	Total N (%) *
Needs additional help in certain subjects	7			7 (2.7)
To determine student's strengths and weaknesses	4	2		6 (2.4)
For Identification, Placement and Review Committee (IPRC)	5	1		6 (2.4)
Difficulty in language development (ESL)	2	4		6 (2.4)
Parents' request	5			5 (2.0)
Lack of motivation		2	2	4 (1.6)
Difficulty with spelling	1	3		4 (1.6)
Reversals		3	1	4 (1.6)
Slow in finishing work	1	1	2	4 (1.6)
Easily distracted	2		2	4 (1.6)
Immature behavior		2	1	3 (1.2)
Great deal of frustration			3	3 (1.2)
Difficulty following directions	1	1	1	3 (1.2)
Speech problems	1	1	1	3 (1.2)
Poor written language		2	1	3 (1.2)
Written work below grade level	2	1		3 (1.2)
Re-assessment of student for outside agency (e.g., Camp Towhee)	1	1		2 (0.8)
Poor listening skills	1	1		2 (0.8)

(Continued)

TABLE 70 (Continued)

REASON FOR REFERRAL FOR
LAST PSYCHOLOGICAL ASSESSMENT

Reason	First Reason Mentioned	Second Reason Mentioned	Third Reason Mentioned	Total N (%) *
Impulsive learning style		1	1	2 (0.8)
Gross motor difficulties		2		2 (0.8)
Poor self-image, little self-confidence	1	1		2 (0.8)
Shy and withdrawn			1	1 (0.4)
Poor work habits			1	1 (0.4)
Recently arrived in Canada	1			1 (0.4)
Poor reading comprehension		1		1 (0.4)
Attention seeker			1	1 (0.4)
Hyperactivity		1		1 (0.4)
Poor social skills		1		1 (0.4)
Poor communication skills	1			1 (0.4)
Difficulty organizing work		1		1 (0.4)
Auditory processing problems		1		1 (0.4)
Irregular attendance		1		1 (0.4)
Daydreams	1			1 (0.4)
Poor expressive language			1	1 (0.4)
Poor visual memory		1		1 (0.4)

(Continued)

TABLE 70 (Continued)

REASON FOR REFERRAL FOR
LAST PSYCHOLOGICAL ASSESSMENT

Reason	First Reason Mentioned	Second Reason Mentioned	Third Reason Mentioned	Total N (%) *
Inability to cope in large group		1		1 (0.4)
Receptive language difficulties		1		1 (0.4)
No information	6			6 (2.0)
Total	255	123	46	424

* Percentages were calculated based on N = 255

TABLE 71

FREQUENCY OF USE OF
DIFFERENT ABILITY TESTS
(in Percent: N = 255)

*Test	Used	Not Used	Used, Not Complete	No Information
WISC-R	80.8	6.7	7.1	0.4
Raven	8.2	90.6	0.8	0.4
Coloured Raven	4.7	94.9	0.4	0.4
PPVT	15.7	83.9	---	0.4
Stanford-Binet	0.4	0.4	93.7	0.4
Otis-Lennon	2.0	97.6	---	0.4

* NOTE: The following are the complete names of the tests:
WISC-R - Wechsler Intelligence Scale for Children - Revised.
Raven's - Standard Progressive Matrices.
Coloured Raven's - Coloured Progressive Matrices.
PPVT - Peabody Picture Vocabulary Test.
Stanford-Binet - Stanford-Binet Scales.
Otis-Lennon - Otis-Lennon Mental Ability test.

TABLE 72

PERCEPTUAL-MOTOR TESTS USED
(in Percent: N = 255)

* Test	Used	Not Used	Used, Not Complete	No Information
Bender-Gestalt	54.1	43.9	0.4	1.6
Slingerland	17.3	42.7	38.8	1.2
Wepman	16.5	80.4	2.0	1.2
Detroit	3.5	87.8	7.5	1.2
I.T.P.A.	11.0	82.4	5.5	1.2

* NOTE: The following are the complete names of the tests:
Bender-Gestalt - The Bender Gestalt Test for Young Children.
Slingerland - The Screening Test for Identifying Children with Specific Language Disability.
Wepman - Auditory Discrimination Test.
Detroit - Detroit Test of Learning Aptitude.
I.T.P.A. - Illinois Test of Psycholinguistic Abilities.

TABLE 73

ACHIEVEMENT TESTS USED
(in Percent: N = 255)

* Tests	Used	Not Used	Used, Not Complete	No Information
W.R.A.T.	48.2	41.6	9.4	0.8
Durrell	2.0	91.0	6.3	0.8
Monroe	5.5	90.2	3.5	0.8
Other (Slosson, M.A.T., Nelson Word List, P.I.A.T.)	11.4	86.7	1.2	0.8

* NOTE: The following are the complete names of the tests:
W.R.A.T. - Wide Range Achievement Test.
Durrell - Durrell Analysis of Reading Difficulty.
Monroe - Monroe Sherman Group Diagnostic Reading Aptitude and Achievement Test.
Slosson - Slosson Intelligence Test.
M.A.T. - Metropolitan Achievement Test.
P.I.A.T. - Peabody Individual Achievement Test.

TABLE 74

VERBAL AND PERFORMANCE I.Q. SCORE DIFFERENCES
ON THE WISC-R

Category	Number	Percent
No discrepancy **	100	39.2
Yes, in favour of Verbal	13	5.1
Yes, in favour of Performance	47	18.4
Comparison not possible	33	12.9
No information	62	24.3
Total	255	99.9% *

* Does not equal 100.0% due to rounding of fractions.

** Differences of less than one standard deviation (15 points) are not considered.

TABLE 75

DEGREE OF WISC-R DISCREPANCY BETWEEN
VERBAL AND PERFORMANCE I.Q. SCORES

Category	Number	Percent
No discrepancy **	100	39.2
1 S.D. (15 points or more)	30	11.8
1.5 S.D. (22 points or more)	22	8.6
2 S.D. (over 30 points)	8	3.1
Comparison not possible	33	12.9
No information	62	24.3
Total	255	99.9% *

* Does not equal 100.0% due to rounding of fractions.

** Difference is less than one standard deviation (15 points).